TB 9-2330-330-14&P-1

TECHNICAL BULLETIN

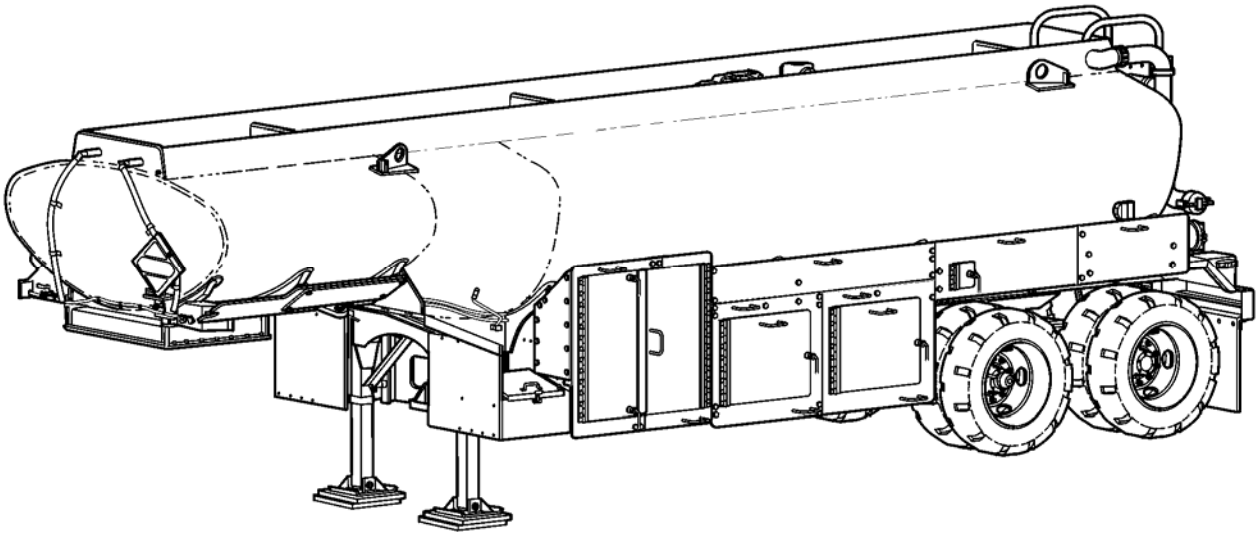
OPERATOR'S, UNIT, INSTALLATION/REMOVAL INSTRUCTIONS, AND REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)

FOR

TANKER BALLISTIC PROTECTION SYSTEM (TBPS/AOA/FTSS)

FOR

SEMITRAILER, FUEL TANKER, 5000-GALLON, FUEL DISPENSING, AUTOMOTIVE M969A3P1 (NSN 2330-01-538-8513)



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Headquarters, Department of the Army

OCTOBER 2006

WARNING SUMMARY

FOR INFORMATION ON FIRST AID, REFER TO FM 4-25.11

WARNING

Eye and hearing protection must be worn at all times when using power tools for grinding, cutting, sawing, and drilling. Failure to do so may result in injury to personnel.

Chemical Agent Resistant Coating (CARC) paint contains isocyanyte (HDI), which is highly irritating to skin and respiratory system. High concentrations of HDI can produce symptoms of itching and reddening of skin, a burning sensation in throat and nose, and watering of the eyes. In extreme concentrations, HDI can cause cough, shortness of breath, pain during respiration, increased sputum production, and chest tightness. The following precautions must be taken whenever using CARC paint:

- NEVER cut CARC-coated materials without high-efficiency, air-purifying respirators in use.
- DO NOT grind or sand painted equipment without high-efficiency, air-purifying respirators in use.
- BE AWARE of CARC paint exposure symptoms; symptoms can occur a few days after initial exposure. Seek medical help immediately if symptoms are detected.

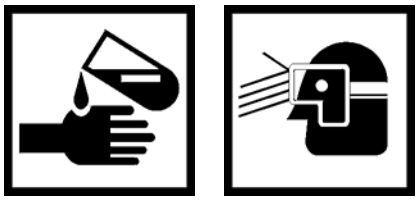
WARNING

Use caution when lifting supplemental armor. A swinging or shifting load may cause injury to personnel.

WARNING SUMMARY (continued)

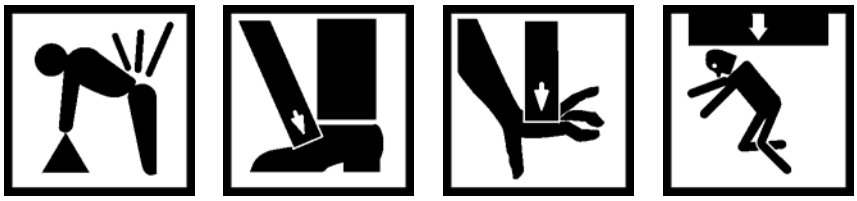
WARNING

Fuel is very flammable and can explode easily. To avoid serious injury or death, keep fuel away from open flame or any spark (ignition source). Keep a B-C fire extinguisher within reach when performing fuel tank repair.



WARNING

Eye and hand protection must be worn at all times when applying Fuel Tanker Self-Sealing (FTSS) Repair Kit. Failure to do so may result in injury to personnel.



WARNING

The armor plates of the Add-On-Armor (AOA) kit are heavy and awkward. Two personnel are required at all times when installing the armor plates on the semitrailer. Failure to do so may result in injury to personnel or damage to equipment.

LIST OF EFFECTIVE PAGES/WORK PACKAGES

Date of issue for original pages/work packages is:

30 October 2006

NOTE: The portion of text affected by the changes is indicated by a vertical line in the outer margins of the page. Changes to illustrations are indicated by miniature pointing hands.

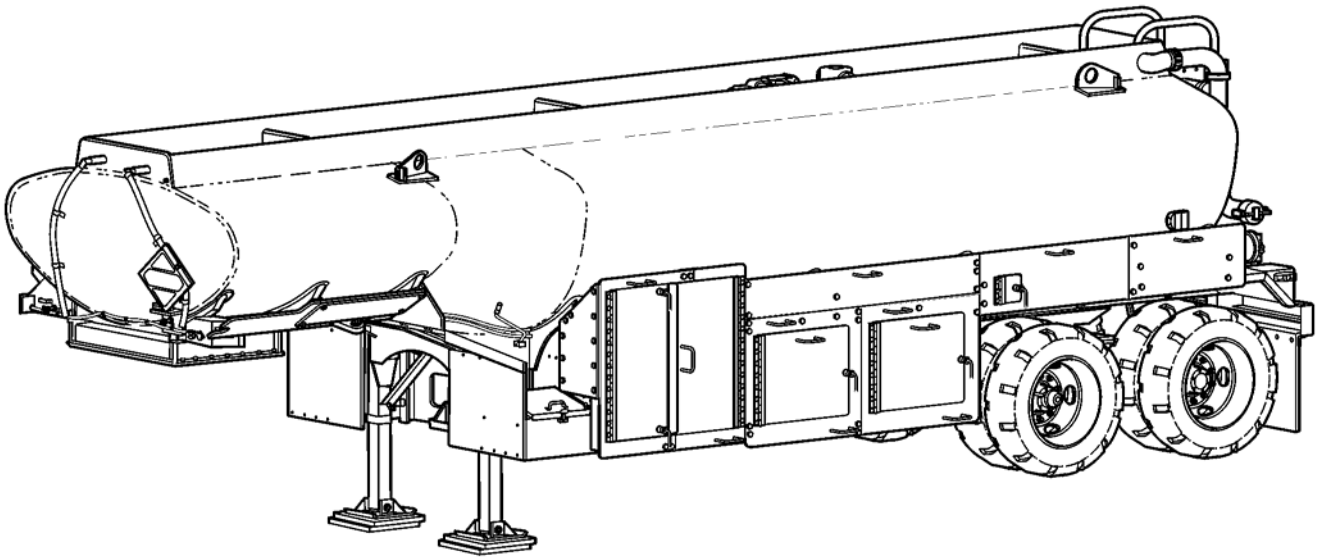
Dates of issue for original and changed pages are:

Original .. 0 .. 30 October 2006

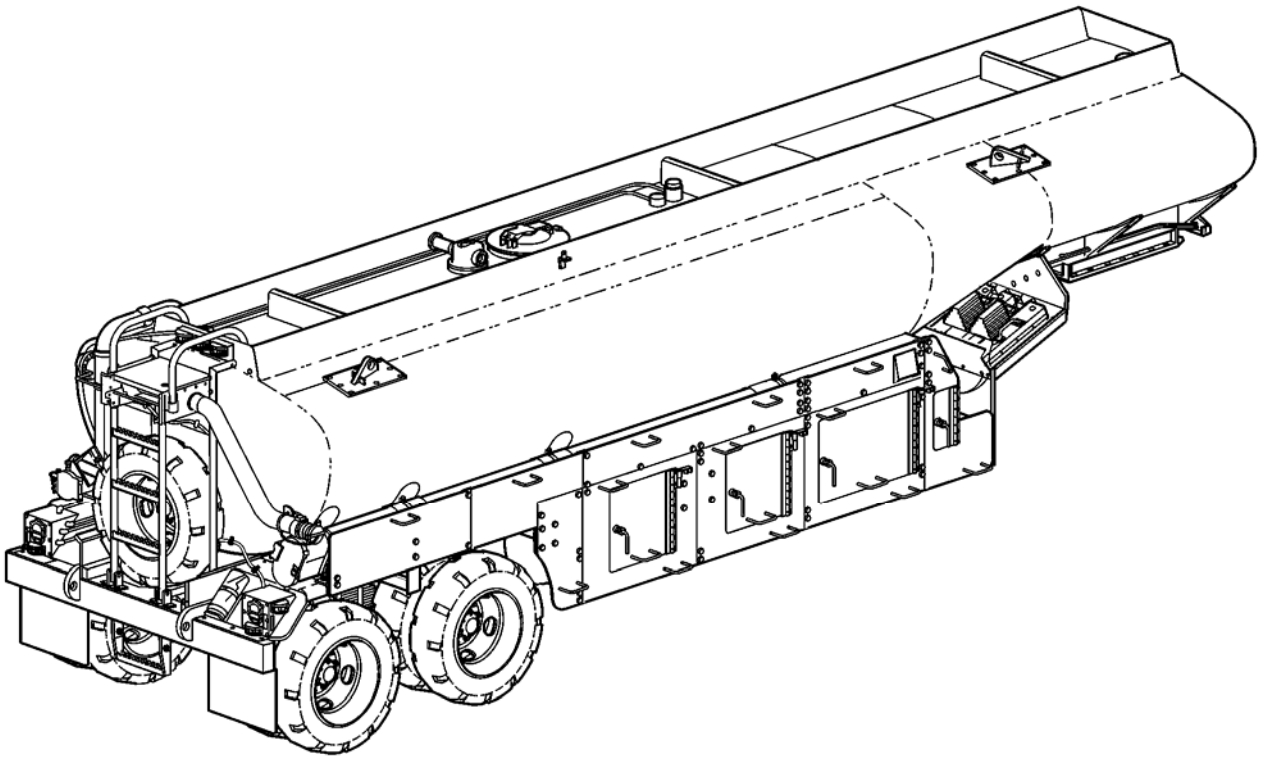
TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 16 AND TOTAL NUMBER OF PAGES IS 184 CONSISTING OF THE FOLLOWING:

Page Number	***Change Number**
Cover	0
a and b	0
A/B blank and B blank	0
i/ii blank and ii blank	0
1-1 and 1-2	0
2-1/2-2 blank and 2-2 blank	0
3-1 thru 3-49	0
4-1 thru 4-58	0
5-1 and 5-2	0
6-1 and 6-2	0
7-1 thru 7-10	0
Figure 1 thru BULK-1	0

*Zero in this column indicates an original page or work package.



M969A3P1 ROADSIDE



M969A3P1 CURBSIDE

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *30 OCTOBER 2006*

TECHNICAL BULLETIN

OPERATOR'S, UNIT, INSTALLATION/REMOVAL INSTRUCTIONS, AND REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)

FOR

TANKER BALLISTIC PROTECTION SYSTEM (TBPS/AOA/FTSS)

FOR

SEMITRAILER, FUEL TANKER, 5000-GALLON, FUEL DISPENSING, AUTOMOTIVE M969A3P1 (NSN 2330-01-538-8513)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this publication. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Submit your DA Form 2028 (Recommended Changes to Publications and Blank Forms) through the Internet, on the Army Electronic Product Support (AEPS) website. The Internet address is http://aeps.ria.army.mil. If you need a password, scroll down and click on ACCESS REQUEST FORM. The DA Form 2028 is located under the Public Application section in the AEOPS Public Home Page. Fill out the form and click on SUBMIT. Using this form on the AEPS will enable us to respond quicker to your comments and better manage the DA Form 2028 program. You may also mail, fax, or e-mail your letter, or DA Form 2028 direct to: AMSTA-LC-LPIT/TECH PUBS, TACOM-R1, 1 Rock Island Arsenal, Rock Island, IL 61299-7630. The e-mail address is tacom-tech-pubs@ria.army.mil. The fax number is DSN 793-0726 or Commercial (309) 782-0726. A reply will be furnished to you.

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CHAPTER 1
GENERAL MAINTENANCE PROCEDURES

SCOPE

The purpose of this Technical Bulletin (TB) is to provide the instructions for applying the Tanker Ballistic Protection System (TBPS) on M969A3 series, 5000-gallon fuel tanker. The TBPS consists of the Fuel Tank Self-Sealing (FTSS) System, Add-On-Armor (AOA) Kit, and FTSS Repair Kit, which all work in conjunction to provide the fuel tanker with ballistic protection against small arms fire.

The TBPS kit is applicable to the following:

Nomenclature	National Stock Number	Part Number
M969A3	2330-01-495-0043	M779-1504-041

When completed, the vehicle NSN and part number will change for the end items as follows:

Nomenclature	National Stock Number	Part Number
M969A3P1	2330-01-538-8513	12500869-1

ARMY KNOWLEDGE ONLINE (AKO) WEBSITE

Refer to the AKO website at https://www.us.army.mil/suite/login/welcome.html for the most recent updates to the kits and TB installation instructions.

MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRs)

If your armor kit needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. If you have Internet access, the easiest and fastest way to report problems or suggestions is to go to https://aeps.ria.army.mil/aepspublic.cfm (scroll down and choose the "Submit Quality Deficiency Report" bar). The Internet form lets you choose to submit an Equipment Improvement Recommendation (EIR) or a Product Quality Deficiency Report (PQDR). You may also submit your information using an SF Form 368 (Product Quality Deficiency Report). You can send your SF Form 368 via e-mail, regular mail, or facsimile using the addresses/facsimile numbers specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual. We will send you a reply.

CORROSION PREVENTION AND CONTROL (CPC)

1. CPC of Army materiel is a continuing concern. Any corrosion problems with this item should be reported so that they can be corrected and improvements made to prevent the problem in future items.

2. While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.

3. If a corrosion problem is identified, it can be reported using SF Form 368, Product Quality Deficiency Report. Use of key words such as "corrosion," "rust," "deterioration," or "cracking" will ensure that the information is identified as a CPC problem.

4. The form should be submitted to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) User's Manual.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Refer to TM 750-244-6, Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use, for procedures on destruction of military vehicles.

PREPARATION FOR STORAGE OR SHIPMENT

Refer to TM 38-470, Storage and Maintenance of Army Prepositioned Stock Material, for preservation, packaging, marking, and preparation for storage or shipment of the M969A3P1 series fuel tanker.

LIST OF ABBREVIATIONS AND ACRONYMS

AKO	Army Knowledge Online
AOA	Add-On-Armor
AVIM	Aviation Intermediate Maintenance
AVUM	Aviation Unit Maintenance
CPC	Corrosion Prevention and Control
DA PAM	Department of the Army Pamphlet
DOT	Department of Transportation
EIR	Equipment Improvement Recommendations
FRP	Field Repair Patch
FTSS	Fuel Tank Self-Sealing
TAMMS	The Army Maintenance Management System
TB	Technical Bulletin
TBPS	Tanker Ballistic Protection System
TM	Technical Manual

CHAPTER 2
PRECONDITIONS

ADD-ON-ARMOR (AOA) AND FUEL TANK SELF-SEALING (FTSS) VEHICLE PREPARATION

NOTE

The fuel tanker does not require purging or sniff testing prior to modification.

1. Ensure the fuel tanker has been emptied in accordance with Operator's Manual TM 9-2330-330-14&P.

2. Ensure the fuel tanker is properly grounded and all vessel openings have been properly and completely secured.

WARNING

Eye and hearing protection must be worn at all times when using power tools for grinding, cutting, sawing, and drilling. Failure to do so may result in injury to personnel.

Chemical Agent Resistant Coating (CARC) paint contains isocyanyte (HDI), which is highly irritating to skin and respiratory system. High concentrations of HDI can produce symptoms of itching and reddening of skin, a burning sensation in throat and nose, and watering of the eyes. In extreme concentrations, HDI can cause cough, shortness of breath, pain during respiration, increased sputum production, and chest tightness. The following precautions must be taken whenever using CARC paint:

- **NEVER cut CARC-coated materials without high-efficiency, air-purifying respirators in use.**
- **DO NOT grind or sand painted equipment without high-efficiency, air-purifying respirators in use.**
- **BE AWARE of CARC paint exposure symptoms; symptoms can occur a few days after initial exposure. Seek medical help immediately if symptoms are detected.**

3. Check assembly areas for any items that could interfere with the installation of the AOA and FTSS kits. Should any items be in the way, cut or hand grind to remove those items.

4. Finish all exposed metal areas using a rust inhibitor primer and paint as specified in Table 7-4, Materials and Parts.

5. Allow for the appropriate time for prime and paint to cure.

6. For specific vehicle preparation and application of the FTSS System and removal instructions for unique items, refer to Chapter 3 of this TB.

AOA AND FTSS VEHICLE PREPARATION (continued)

WARNING

The armor plates of the Add-On-Armor (AOA) kit are heavy and awkward. Two personnel are required at all times when installing the armor plates on the semitrailer. Failure to do so may result in injury to personnel or damage to equipment.

7. For specific installation and removal instructions of the AOA kit, refer to Chapter 4 of this TB.

CHAPTER 3
FUEL TANK SELF-SEALING (FTSS) SYSTEM

SCOPE

This section provides the instructions for applying the FTSS System to M969A3P1 series fuel tankers. The FTSS System is a coating applied to the exterior surface of the fuel tank vessel that will seal a leak caused by small arms fire within twenty minutes of impact. Once sealed, the fuel tanker may continue operating under normal conditions. In the event the FTSS System does not seal a leak within twenty minutes, a repair kit is provided to patch the affected area. Refer to Chapter 5, FTSS Repair Kit, for instructions on applying the field patch assemblies.

ARMY KNOWLEDGE ONLINE (AKO) WEBSITE

Refer to the AKO website at https://www.us.army.mil/suite/login/welcome.html for the most recent updates to the kits and TB installation instructions.

KIT PARTS AND THEIR DISPOSITION

The following table lists the kit components of the AOA kit. This list can be used to inventory the kit for completeness.

NOTE

The items listed in Table 3-1 are FTSS kit installed parts only.

Table 3-1. FTSS Kit Contents List – 57K4864

Item No.	Nomenclature	National Stock Number	Part Number	CAGE	Qty
1	HOSE, RUBBER EPDM (5 IN.)		5304K46	39428	2
2	CLAMP, TUBE 1/2-2.50	4730-01-375-8073	5416K21	3A054	6
3	NIPPLE, DRAIN HOSE		12501996	31902	2
4	HOSE, RUBBER EPDM (42 IN.)		5304K46	39428	2
5	CLIP, UNIVERSAL CONDUIT		12500884-004	31902	4
6	SCREW, THREAD FORMING		12500885	31902	12
8	SUPPORT, PLACARD, FRONT		12502015	31902	1
9	SCREW, CAP, HEXAGON, HEAD 3/8-16X1.00	5305-00-068-0510	B1821BH038C100N	80204	12
10	CLIP, UNIVERSAL CONDUIT		12500884-002	31902	3
17	SCREW, CAP, HEXAGON, HEAD 3/8-16X1.50	5305-00-725-2317	B1821BH038C150N	80204	4
34	PANEL, SIDE, ROADSIDE		12501994	31902	1
35	WASHER, LOCK, 3/8	5310-00-984-7042	MS35338-141	96906	8
38	CLIP, UNIVERSAL CONDUIT		12500884-003	31902	5
39	SELF-LOCKING BRACKET, REAR LIGHT		12502031	19207	1
162	SCREW, CAP, HEXAGON, HEAD 3/8-16X1.00	5305-00-068-0511	B1821BH038C125N	80204	33

KIT PARTS AND THEIR DISPOSITION (continued)

Table 3-1. FTSS Kit Contents List – 57K4864 (continued)

Item No.	Nomenclature	National Stock Number	Part Number	CAGE	Qty
163	WASHER, FLAT	5310-00-773-7618	MS15795-814	80205	128
164	BRACKET, TUBE CANISTER, ROADSIDE		12502004	31902	3
165	NUT		M45913/4-6C-G8-Z	96906	65
166	NUT		M45913/4-8C-G8-Z	96906	18
167	WASHER, FLAT	5310-00-767-9425	MS15795-818	80205	36
168	SCREW, CAP, HEXAGON, HEAD 1/2-16X1.75	5310-01-310-2353	B1821BH050C175N	80204	18
170	BRACKET, TUBE CANISTER, CENTER, ROADSIDE		12502018	31902	1
171	BRACKET, TUBE CANISTER, CENTER, ROADSIDE		12502017	31902	1
172	BRACKET, TUBE CANISTER, CURBSIDE		12502003	31902	4

VEHICLE PREPARATION

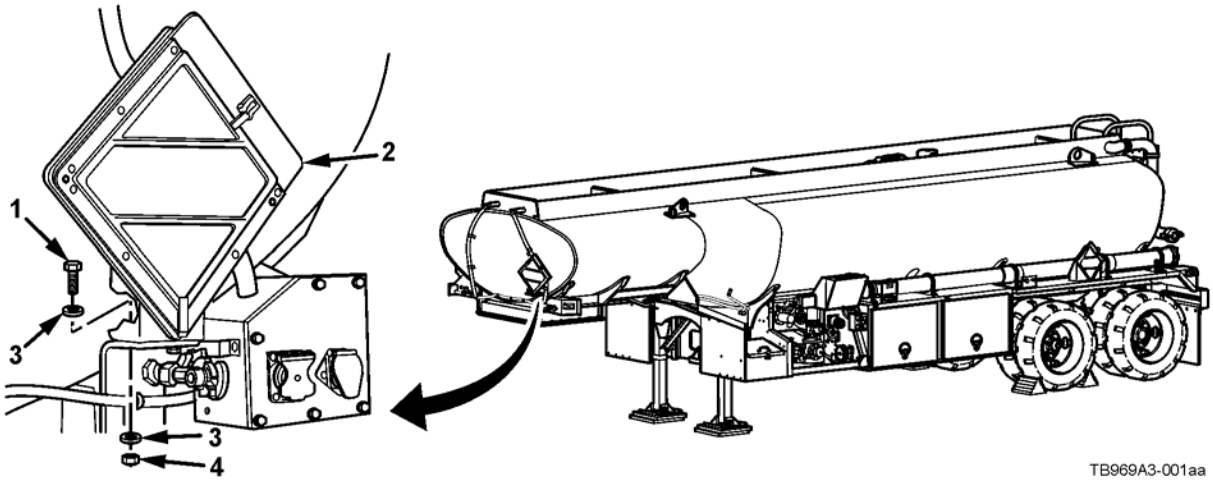
The following procedure removes components to allow access to restricted areas of the fuel tanker before the FTSS System coating is applied. Once the coating has been applied, dried, and inspected, some of the components may be reinstalled.

NOTE

Check assembly areas for any items that could interfere with the installation of the FTSS kit, should any items be in the way, use a Hand Grinder to remove those items. Finish all exposed metal areas using a rust inhibitor primer and paint as specified in Table 7-4, Materials and Parts. Allow for the appropriate time for prime and paint to cure.

1. Ensure the semitrailer is properly grounded.

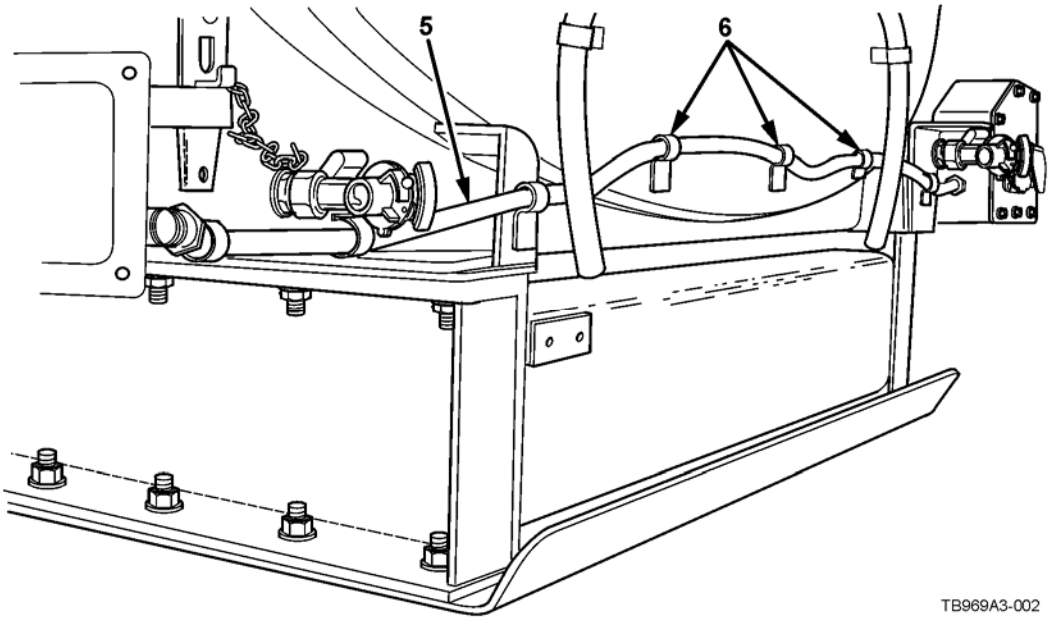
2. Remove two self-locking nuts (4), four flat washers (3), two capscrews (1), and hazardous materials placard bracket (2) as a unit from front of semitrailer. Discard hardware.



VEHICLE PREPARATION (continued)

3. Bend three clips (6) open and remove electrical conduit (5) from clips (6).

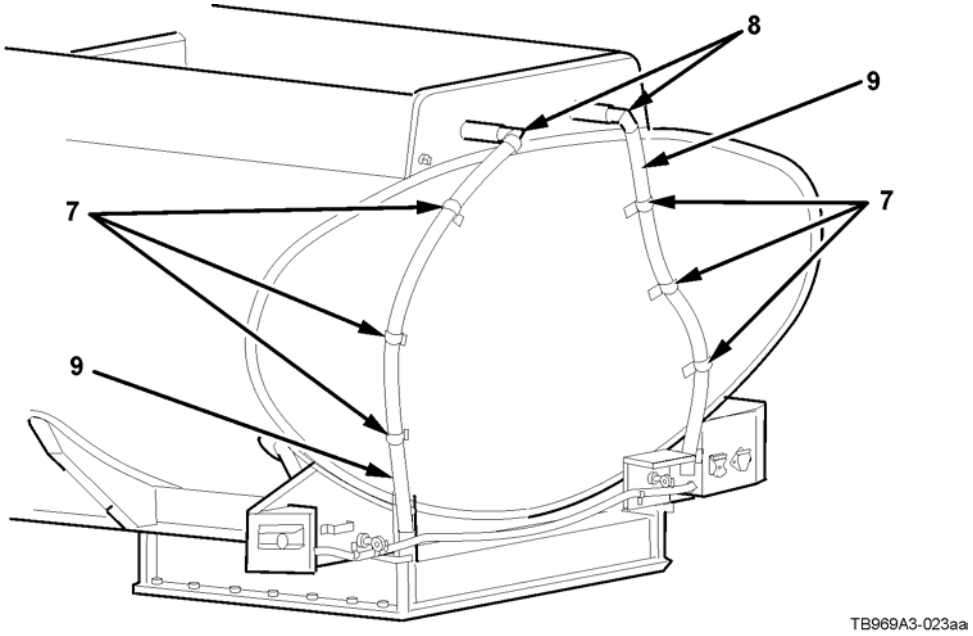
4. Remove three clips (6) by grinding them smooth to surface of semitrailer.



5. Bend six clips (7) open and remove two drain hose tubes (9) from clips (7).

6. Remove six clips (7) by grinding them smooth to surface of semitrailer.

7. Cut two drain hose tubes (8) approximately 4 to 5 inches (10 to 13 cm) from tanker body. Ensure all sharp edges and burrs are removed. Discard drain tubes.

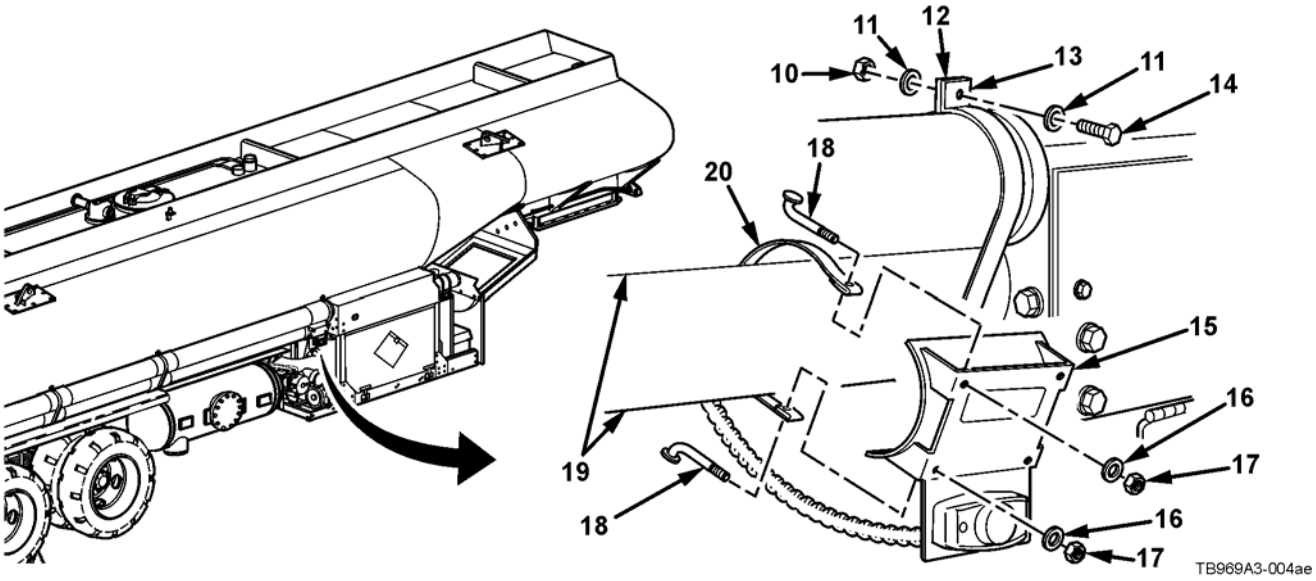


VEHICLE PREPARATION (continued)

8. Remove two hoses from curbside hose tubes, refer to TM 9-2330-330-14&P. Set hoses aside for reinstallation.

9. Remove self-locking nut (10), capscrew (14), two washers (11), and retaining strap (13) from mounting bracket (12). Discard hardware.

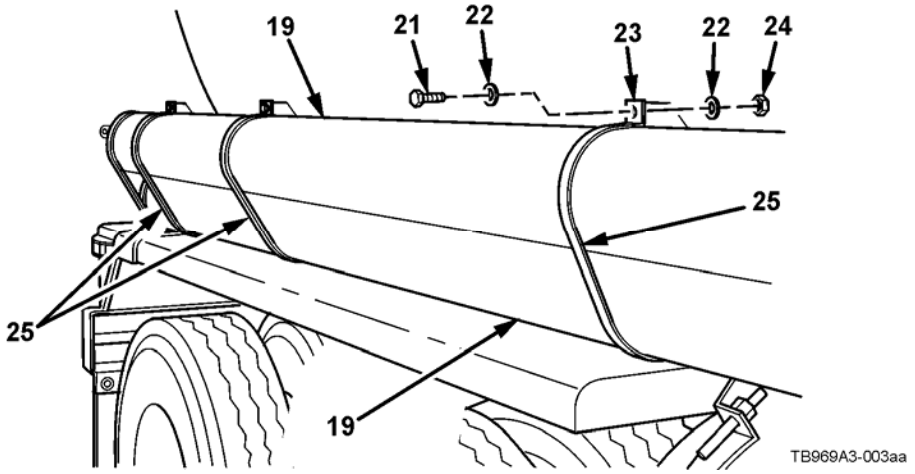
10. Remove four self-locking nuts (17), four flat washers (16), four J-bolts (18), two retaining straps (20), and side marker light box (15) from hose tube (19). Discard nuts.



NOTE

An assistant will help with Step 11.

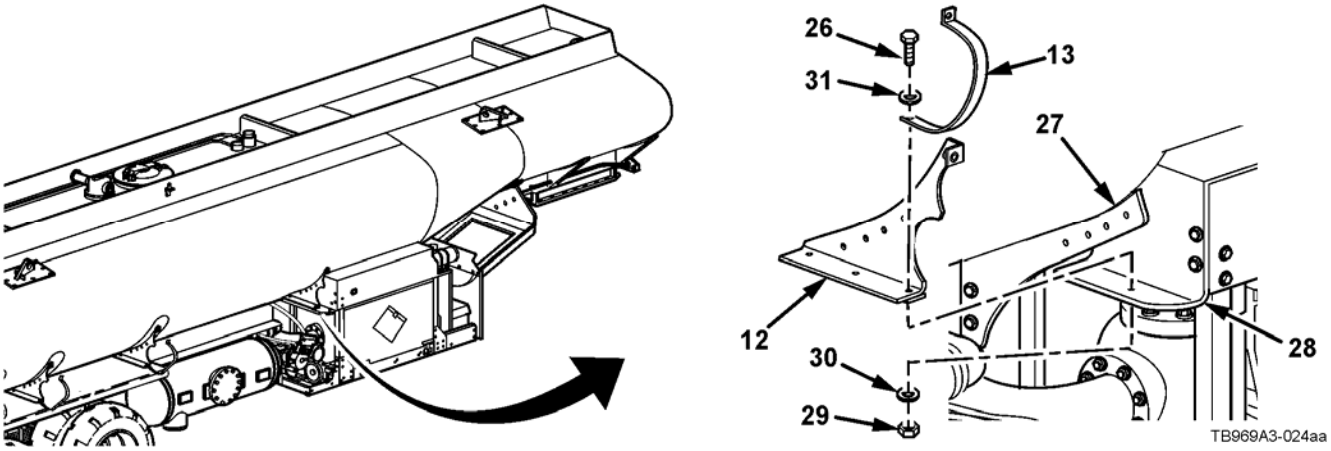
11. Remove three self-locking nuts (24), six washers (22), three capscrews (21), three retaining straps (25), and two curbside hose tubes (19) from three mounting brackets (23) from semitrailer. Discard hardware.



VEHICLE PREPARATION (continued)

12. Remove self-locking nut (29), capscrew (26), two flat washers (31), and retaining strap (13) from mounting bracket (12) and engine compartment (28). Discard hardware.

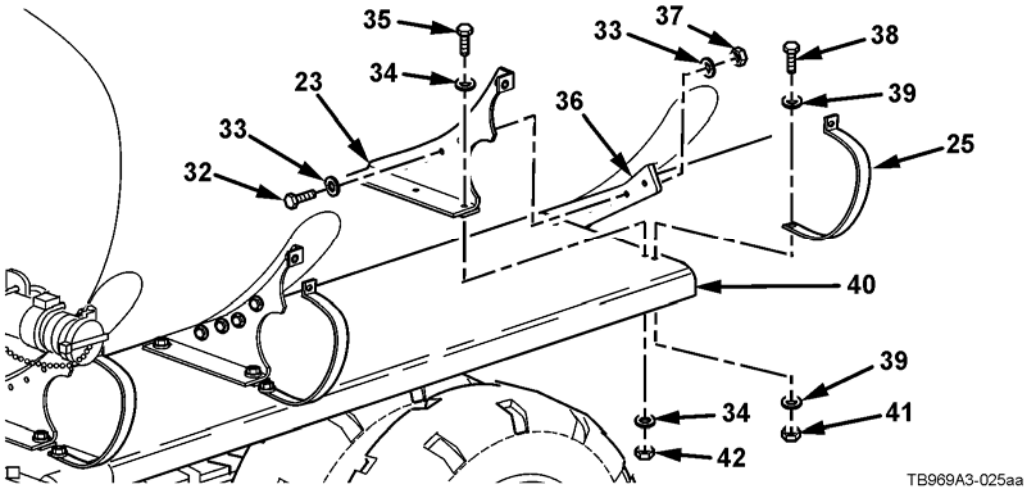
13. Remove remaining two self-locking nuts (29), two capscrews (26), four flat washers (31), and mounting bracket (12) from crossmember (27) and engine compartment (28). Discard mounting bracket and hardware.



14. Remove three self-locking nuts (41), three capscrews (38), six flat washers (39), and three retaining straps (25) from mounting brackets (23) and fender (40). Discard hardware.

15. Remove four self-locking nuts (39), four capscrews (32), eight flat washers (33), and two mounting brackets (23) from crossmember (36). Discard hardware.

16. Remove four self-locking nuts (42), four capscrews (35), eight flat washers (34), and two mounting brackets (23) from fender. Discard hardware and mounting brackets.



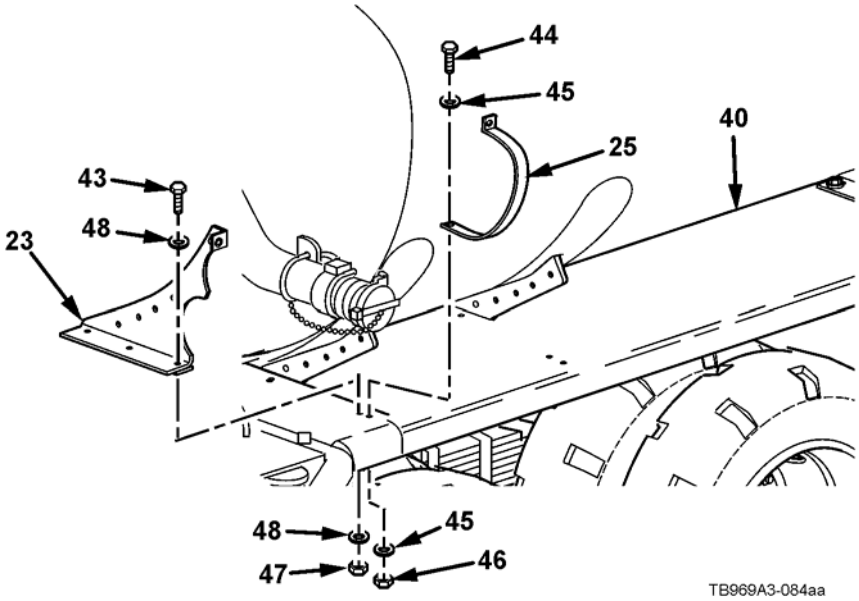
VEHICLE PREPARATION (continued)

17. Remove self-locking nut (46), capscrew (44), two flat washers (45), and retaining strap (25) from mounting bracket (23). Discard hardware.

NOTE

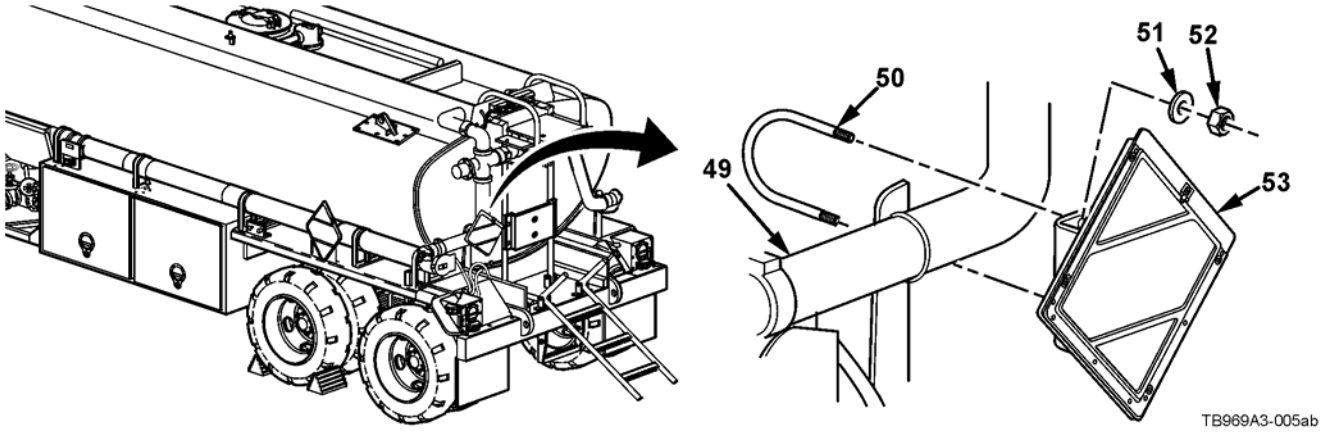
The rear mounting bracket does not mount to crossmember.

18. Remove two self-locking nuts (47), two capscrews (43), four flat washers (48), and mounting bracket (23) from fender (40). Discard hardware and mounting bracket.



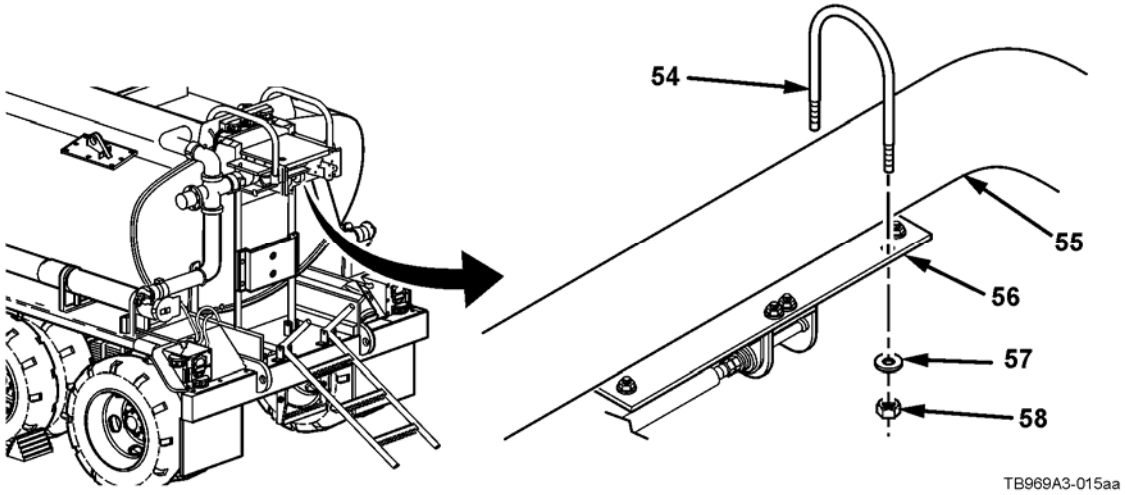
19. Remove spare tire from semitrailer, refer to TM 9-2330-330-14&P.

20. Remove two self-locking nuts (52), two washers (51), U-bolt (50), and hazardous materials placard bracket (53) from vapor recovery pipe (49) at rear of semitrailer. Discard washers and nuts.

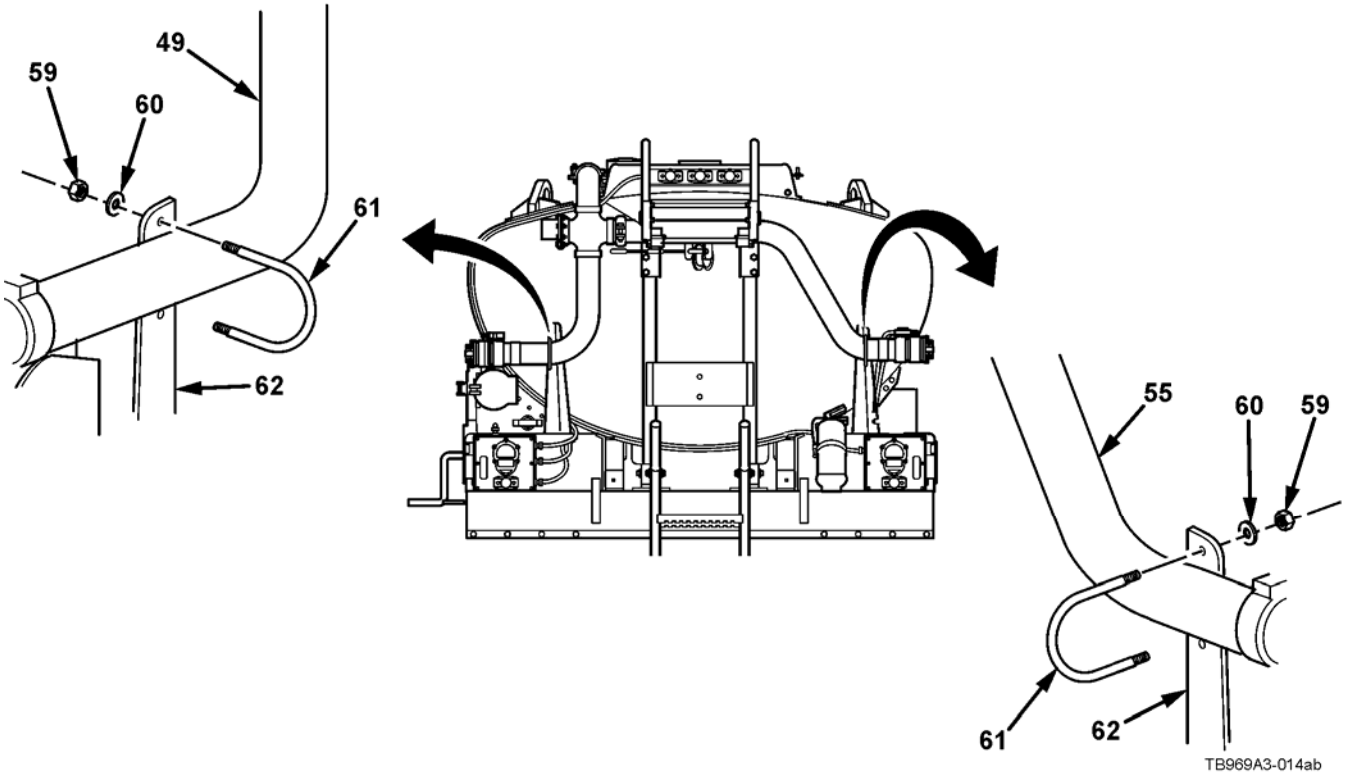


VEHICLE PREPARATION (continued)

21. Remove two self-locking nuts (58), two washers (57), U-bolt (54), and winch bracket (56) from pipe (55). Discard washers and nuts.



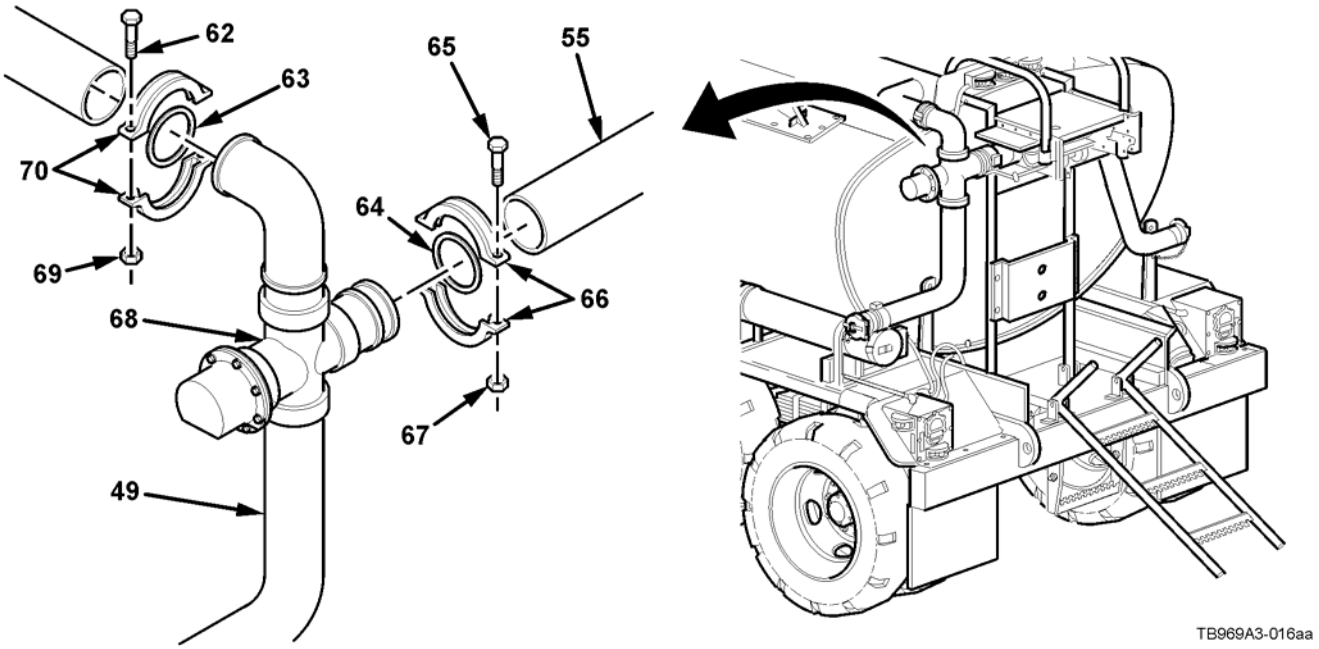
22. Remove four self-locking nuts (59), four washers (60), and two U-bolts (61) from pipes (49) and (55) and brackets (62). Discard washers and nuts.



VEHICLE PREPARATION (continued)

23. Remove two nuts (67), two bolts (65), seal (64), split-pipe coupling (66), and pipe (55) from cross assembly (68).

24. Remove two nuts (69), two bolts (62), seal (63), split-pipe coupling (70), and cross assembly (68), with pipe (49) attached, from semitrailer.

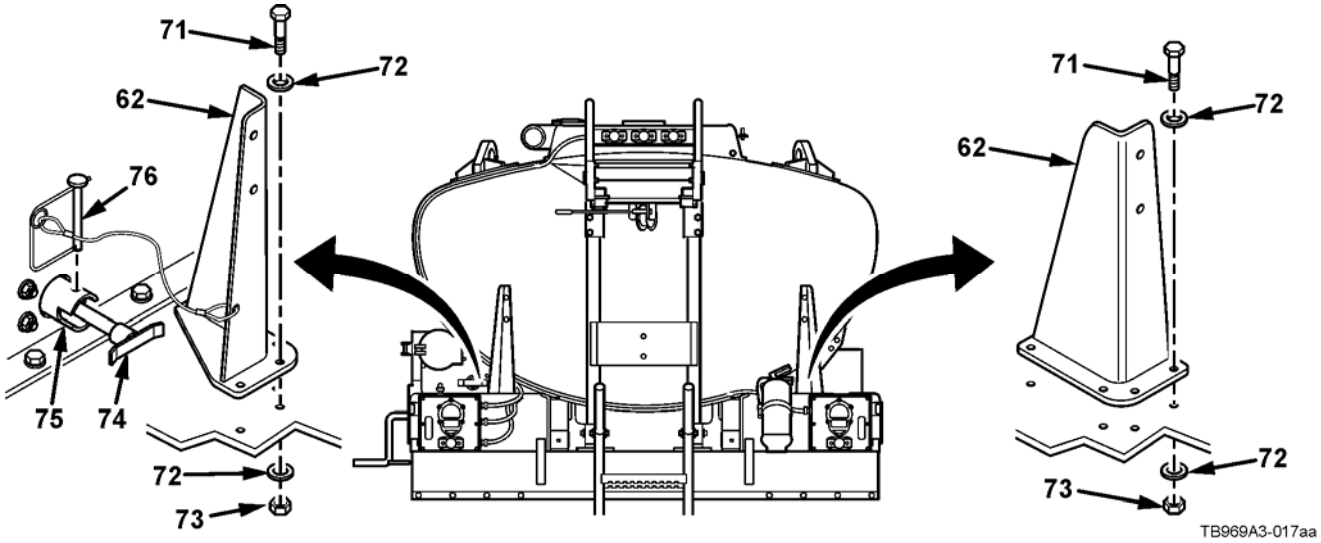


25. Remove retaining pin (76) and ground rod (74) from ground rod storage tube (75).

NOTE

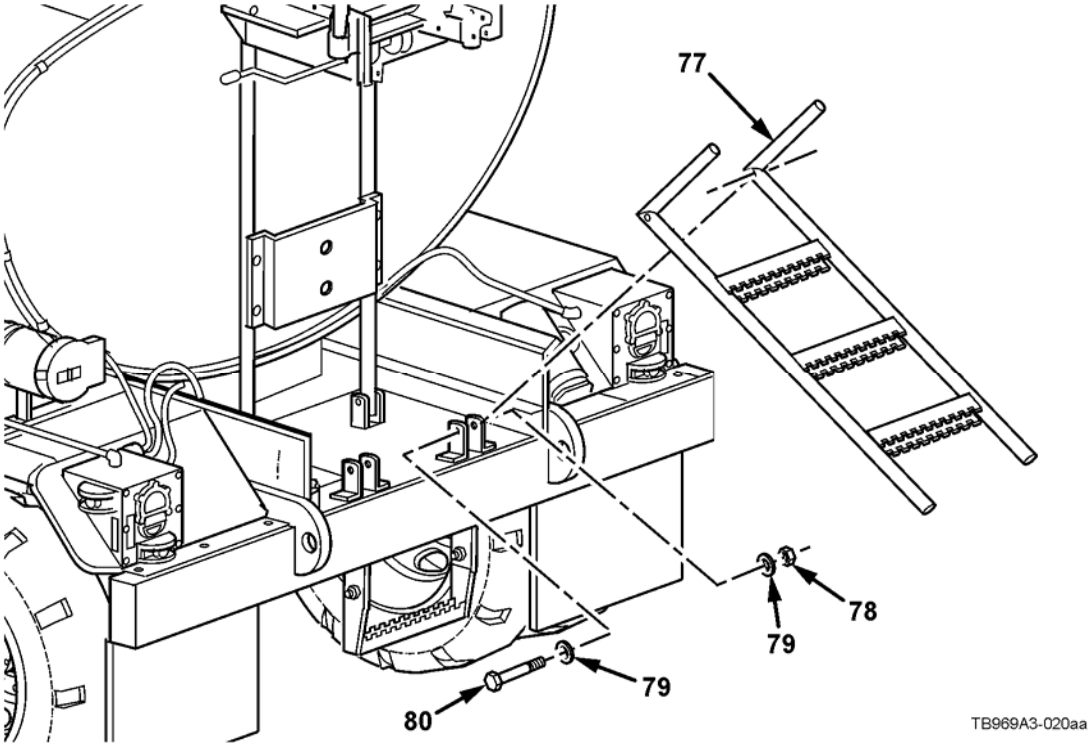
Vent tube brackets may be attached to fenders using three or four capscrews.

26. Remove six capscrews (71), six self-locking nuts (73), twelve flat washers (72), and two brackets (62) from semitrailer. Discard hardware.

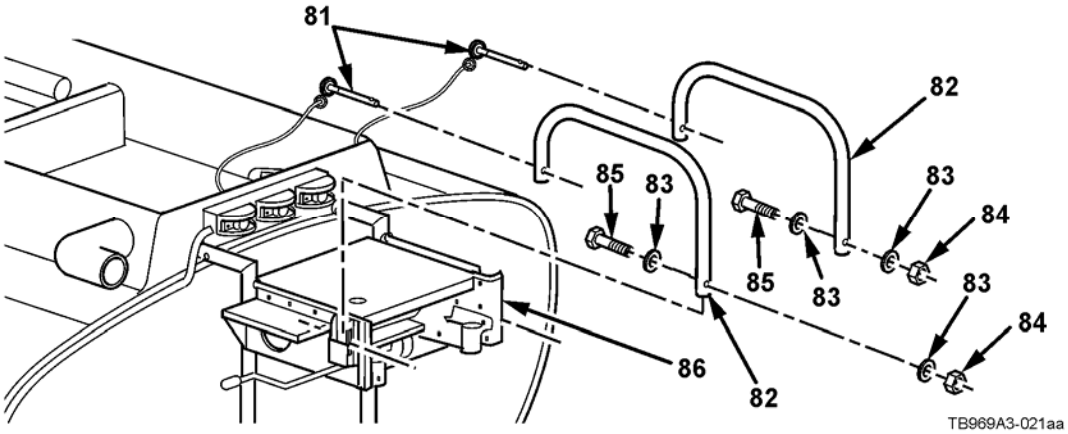


VEHICLE PREPARATION (continued)

27. Remove two self-locking nuts (78), two capscrews (80), four flat washers (79), and ladder (77) from semitrailer. Discard washers and nuts.

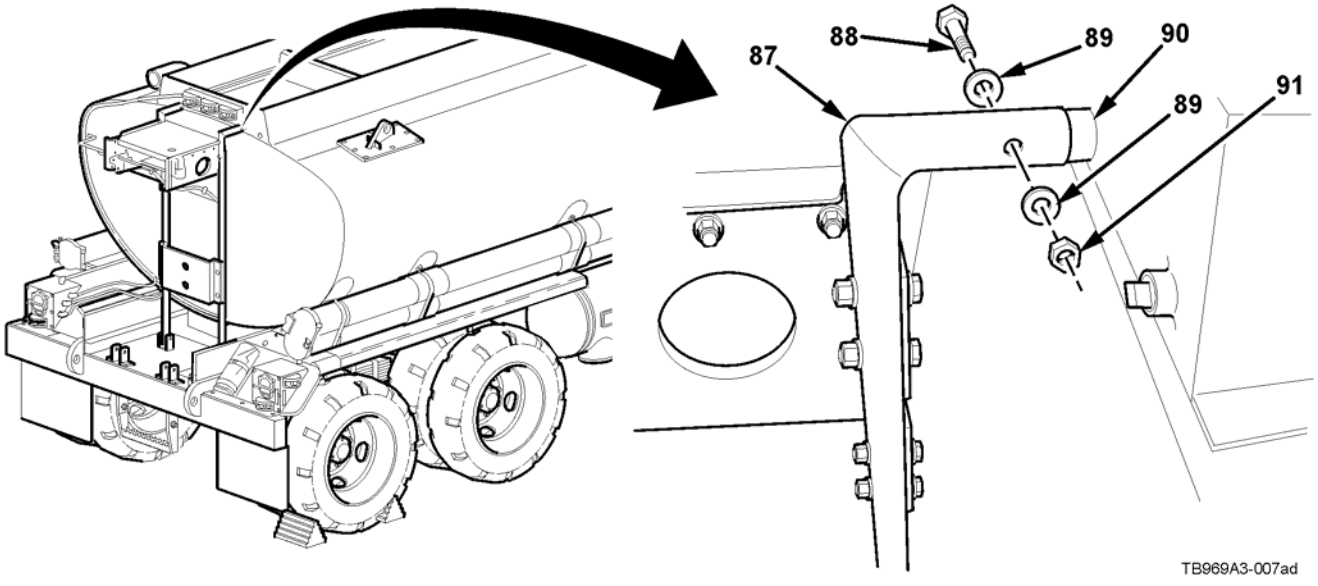


28. Release two retaining pins (81), two capscrews (85), two self-locking nuts (84), and four flat washers (83) and remove two handrails (82) from platform support (86). Discard washers and nuts.



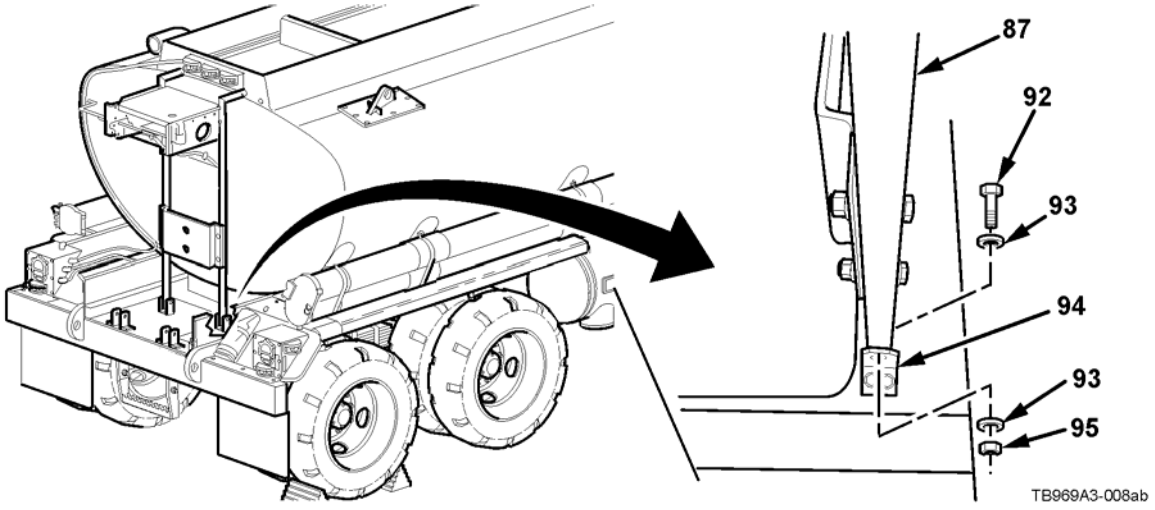
VEHICLE PREPARATION (continued)

29. Remove two capscrews (88), two self-locking nuts (91), and four flat washers (89) from left and right channels (90) at top of spare tire support and roadside drain pipe (87). Discard washers and nuts.



30. Remove two capscrews (92), two self-locking nuts (95), and four flat washers (93) from bottom support bracket (94) and spare tire support and roadside drain pipe (87). Discard washers and nuts.

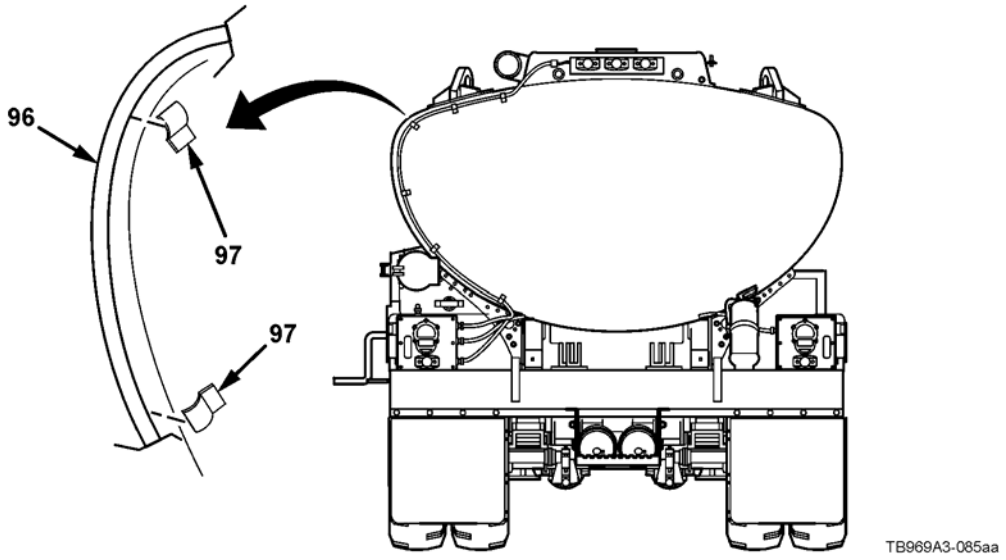
31. Remove spare tire support and roadside drain pipe (87) from semitrailer.



VEHICLE PREPARATION (continued)

32. Bend six clips (97) open and remove electrical conduit (96) from clips (97).

33. Remove six clips (97) by grinding flush to surface of semitrailer.



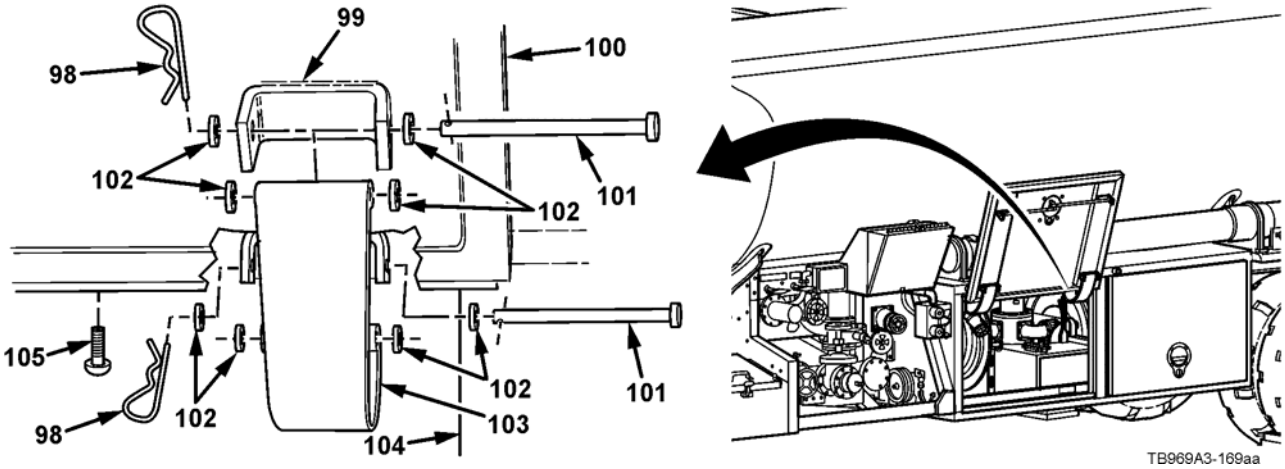
34. Open hose reel cabinet doors.

NOTE

- There are two hose reel cabinet door springs per cabinet and two cabinets on the M696A3. This procedure removes the door springs from the front cabinet.
- Cabinet door must be secured in the open position prior to removal of hinges.

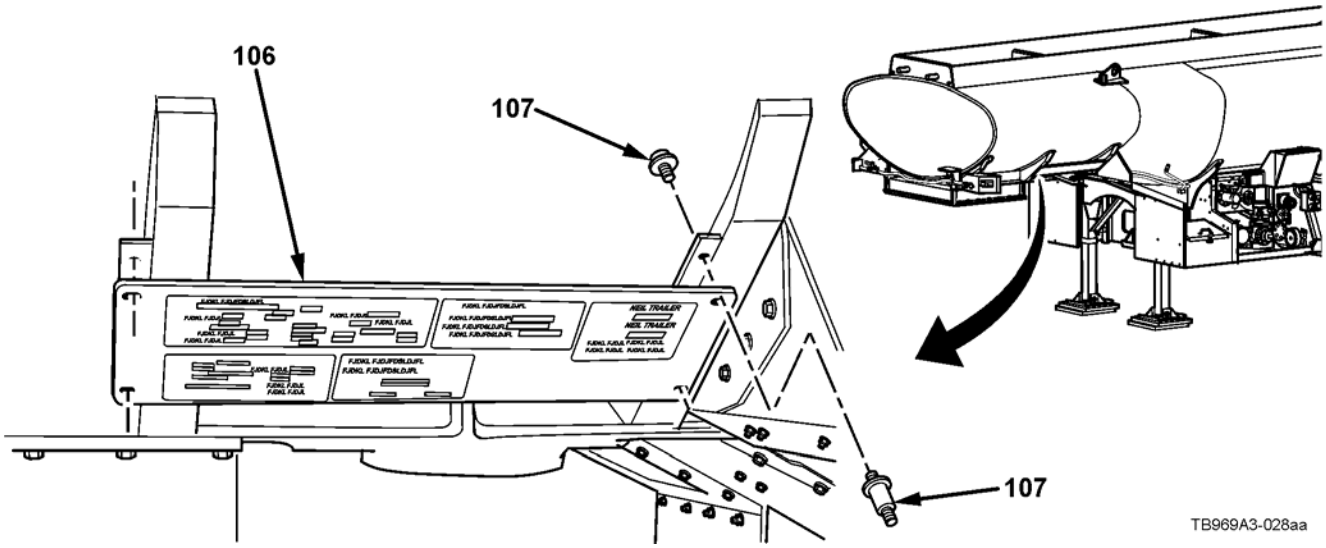
35. Remove four cotter pins (98), sixteen washers (102), four pins (101), and two hinges (103) from four door spring brackets (99). Discard hinges and hardware.

36. Remove eighteen rivets (105), as required, and hose reel cabinet door (100) from hose reel cabinet (104). Discard door and hardware.



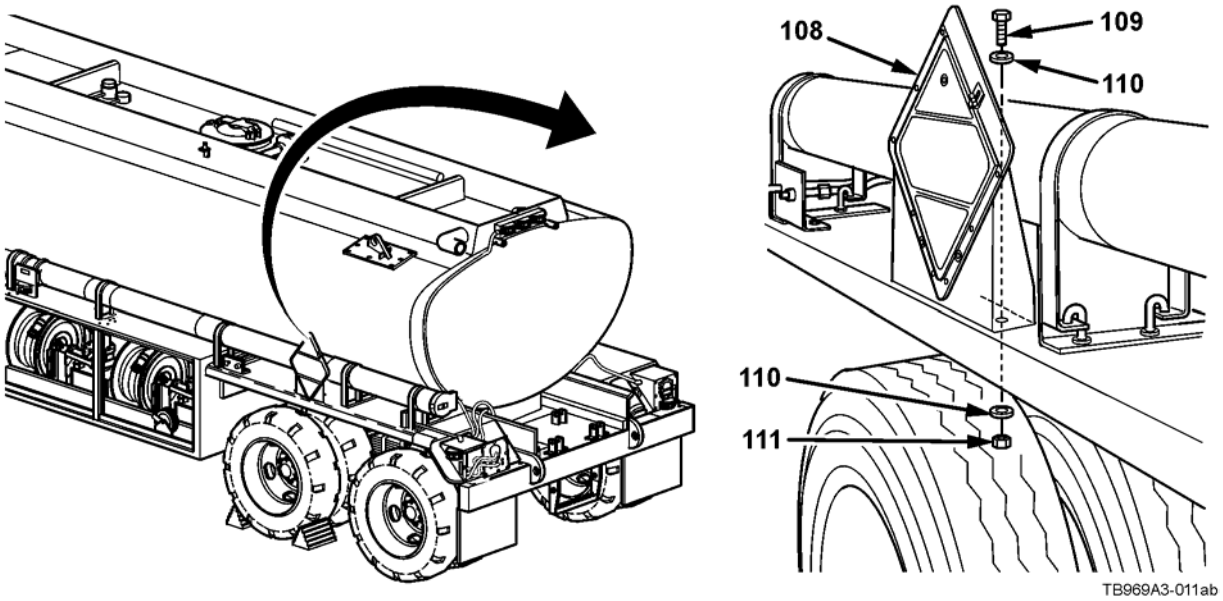
VEHICLE PREPARATION (continued)

37. Using nut splitter (Table 7-1), remove four huck bolts (107) and vehicle identification plate panel (106) from semitrailer. Discard huck bolts.



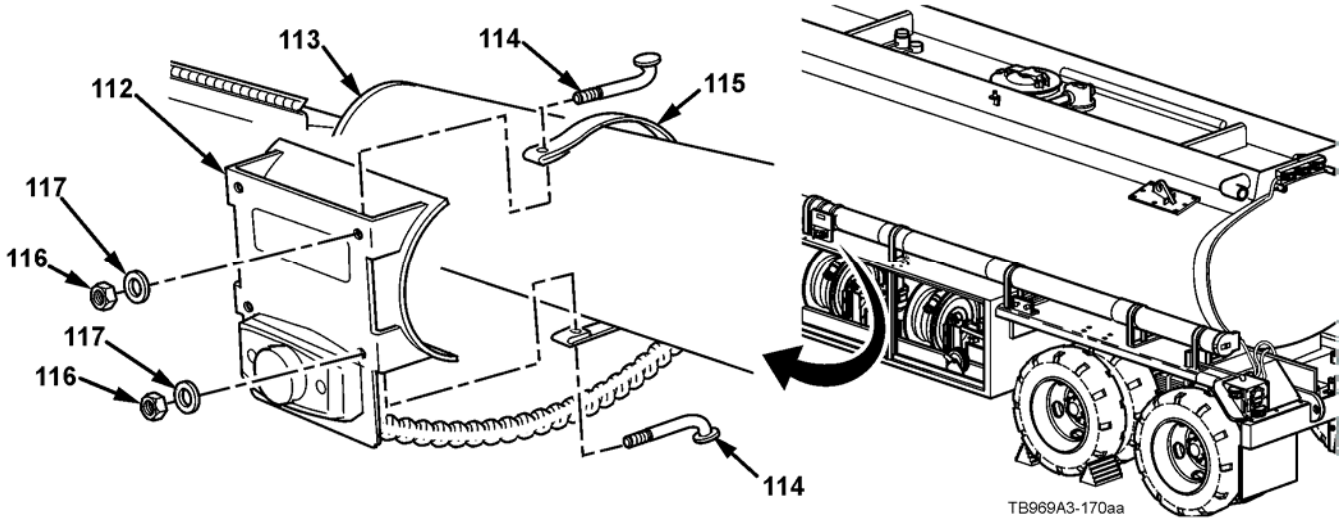
38. Remove hose from hose tube, refer to TM 9-2330-330-14&P.

39. Remove three capscrews (109), three self-locking nuts (111), six washers (110), and hazardous materials placard bracket (108) from semitrailer. Discard hazardous materials placard bracket and hardware.

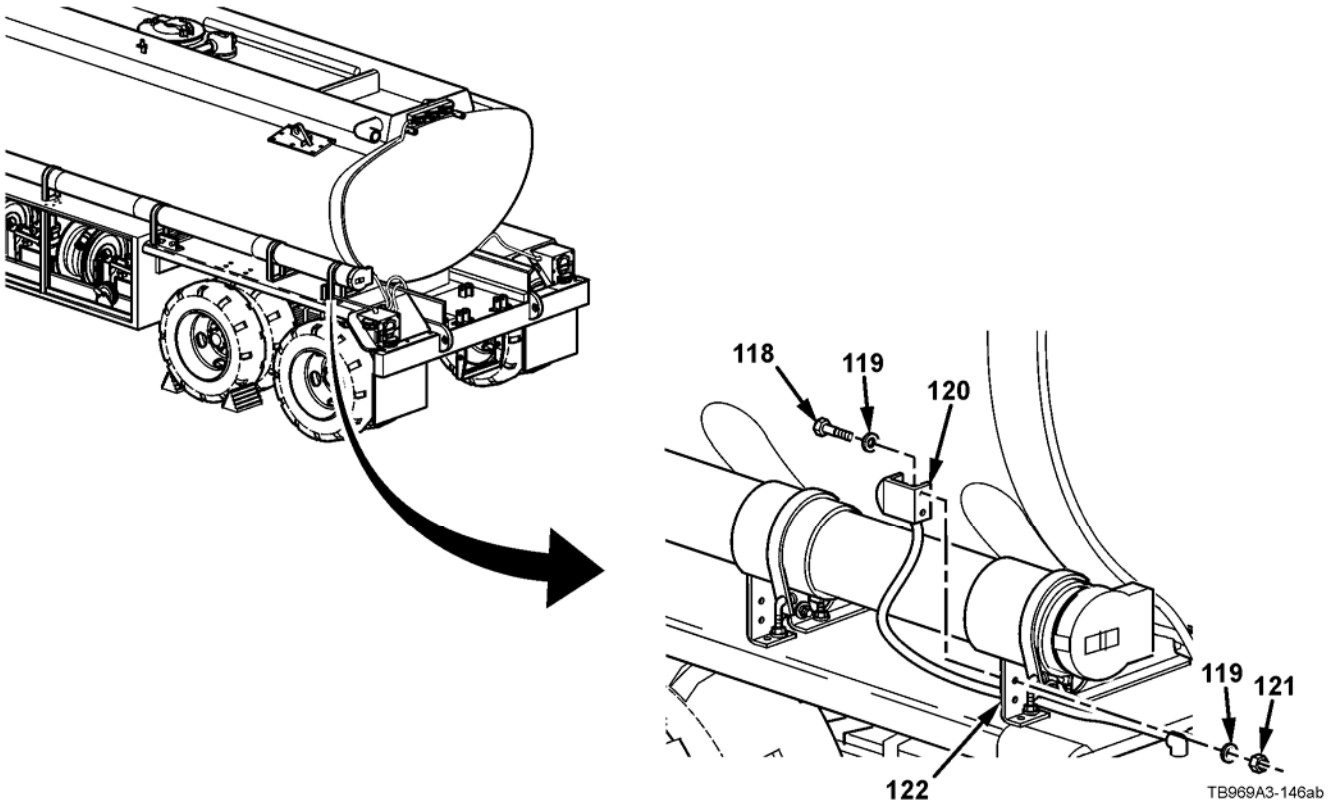


VEHICLE PREPARATION (continued)

40. Remove four self-locking nuts (116), four flat washers (117), four J-bolts (114), two retaining straps (115), and marker light box (112) from hose tube (113). Secure marker light box to semitrailer. Discard washers and nuts.

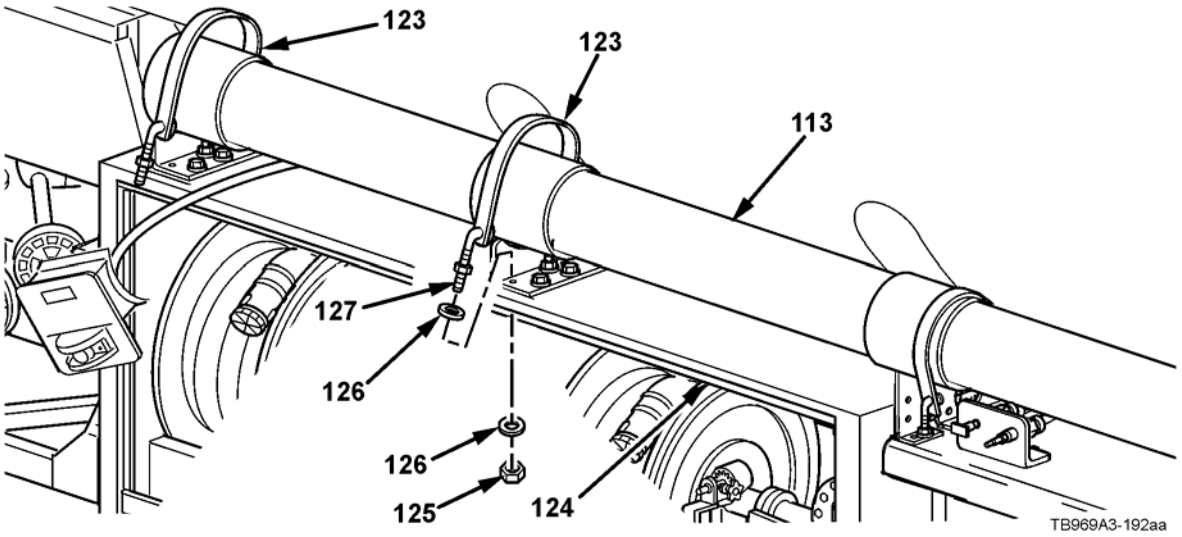


41. Remove two self-locking nuts (121), two capscrews (118), four flat washers (119), and ABS light (120) from mounting bracket (122). Discard hardware.



VEHICLE PREPARATION (continued)

42. Remove two self-locking nuts (125), four flat washers (126), two J-bolts (127), and two retaining straps (123) from hose tube (113) and hose reel housing (124). Discard washers and nuts.

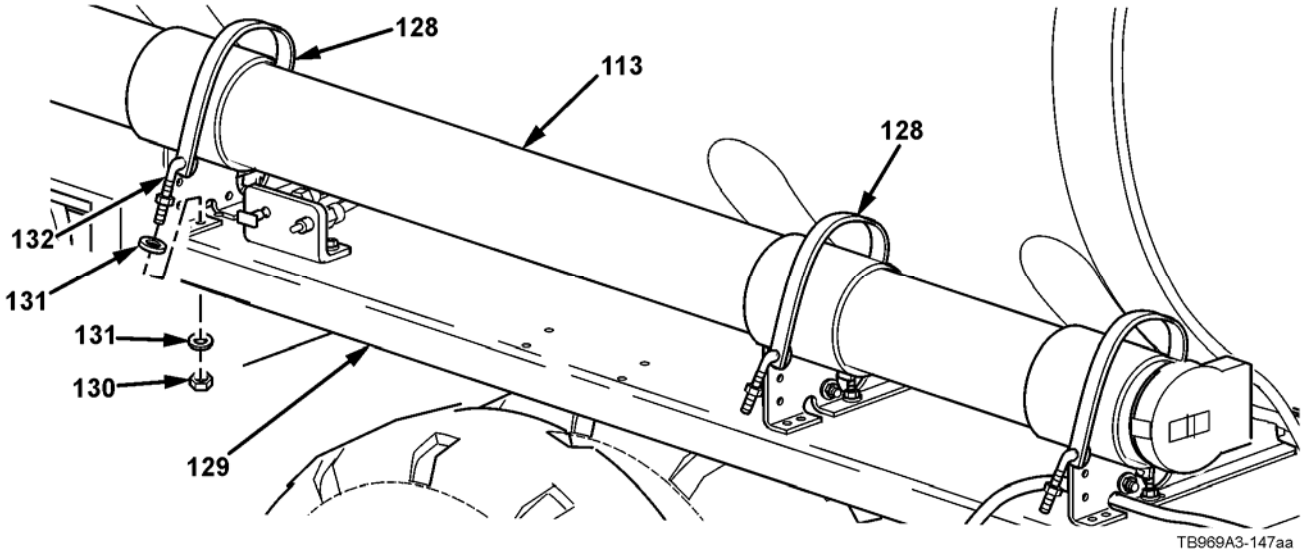


43. Remove six self-locking nuts (130), six flat washers (131), three J-bolts (132), and three retaining straps (128) from hose tube (113) and fender (129). Discard washers and nuts.

NOTE

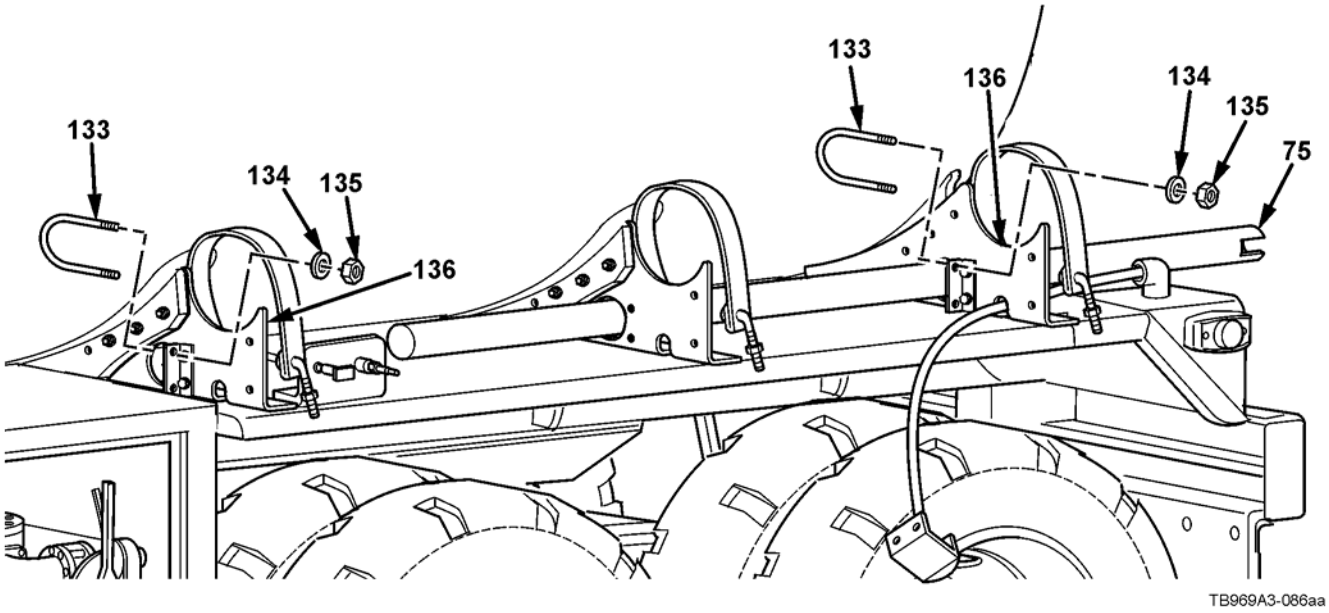
An assistant will help you with Step 44.

44. Remove hose tube (113) from semitrailer.



VEHICLE PREPARATION (continued)

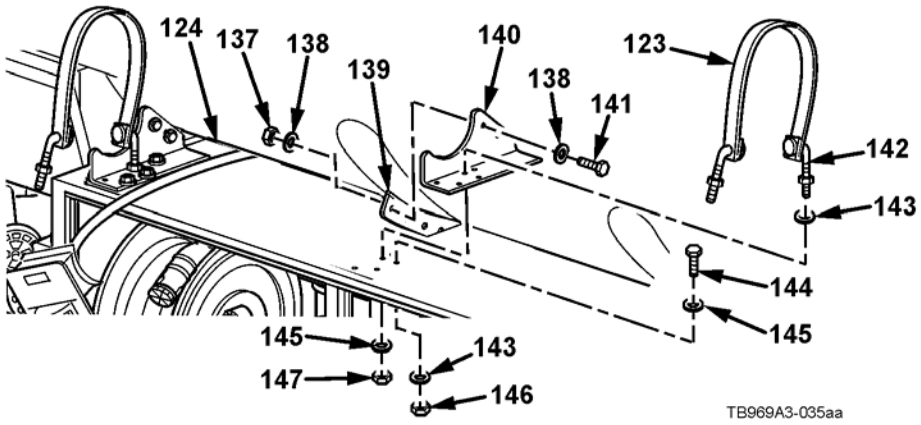
45. Remove four self-locking nuts (135), four flat washers (134), two U-bolts (133), and ground rod storage tube (75) from two mounting brackets (136). Discard washers and nuts.



46. Remove four self-locking nuts (137), four capscrews (141), eight flat washers (138), and two mounting brackets (140) from two crossmembers (139). Discard U-bolts.

47. Remove two self-locking nuts (144), two J-bolts (142), four flat washers (143), and two retaining straps (123) from two mounting brackets (140) and hose reel cabinet (129). Discard hardware.

48. Remove six self-locking nuts (147), six capscrews (144), twelve flat washers (145), and two mounting brackets (140) from hose reel housing (124). Discard mounting brackets and hardware.

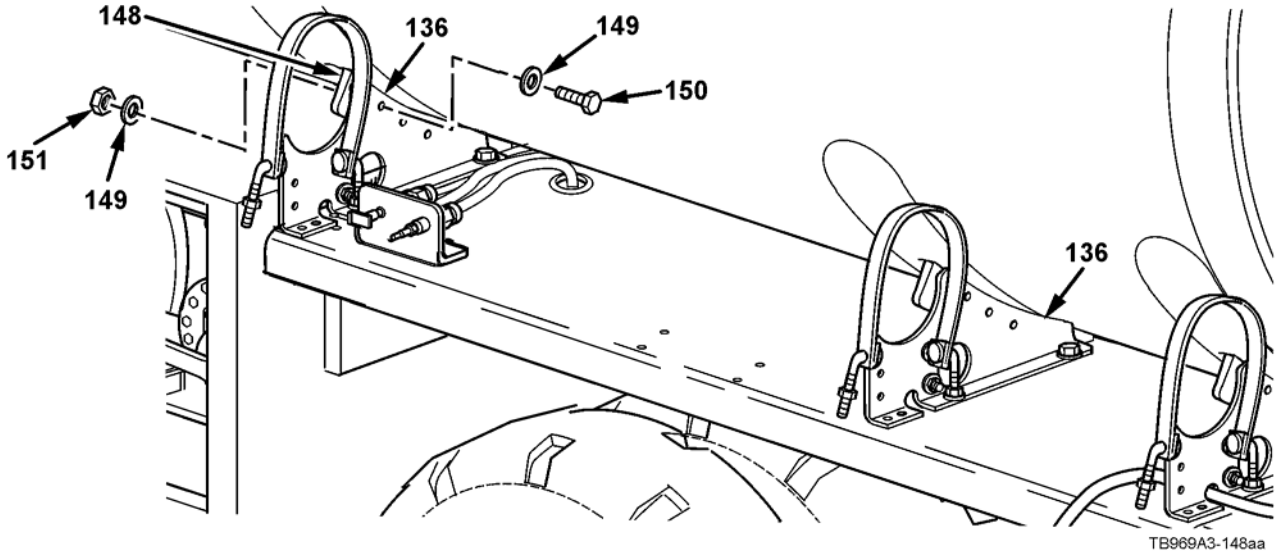


VEHICLE PREPARATION (continued)

NOTE

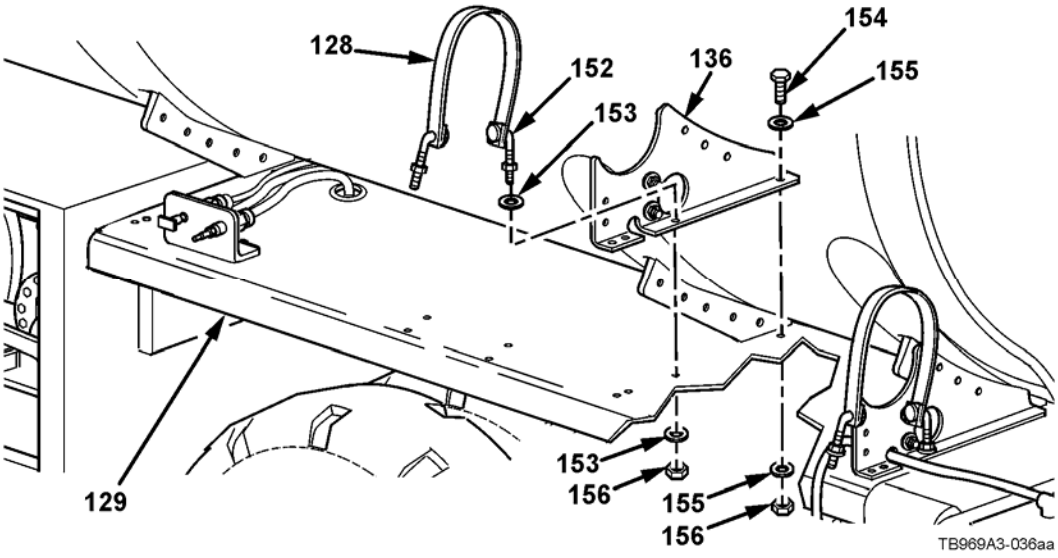
The rear fender mounting bracket does not mount to the crossmember with hardware.

49. Remove four self-locking nuts (151), four capscrews (150), eight flat washers (149), and two mounting brackets (136) from crossmembers (148). Discard hardware.



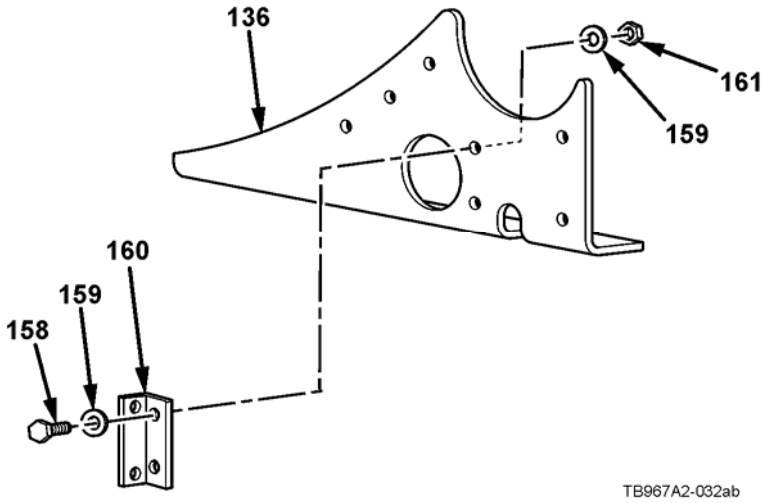
50. Remove three self-locking nuts (157), three J-bolts (152), six flat washers (153), and three retaining straps (128) from three mounting brackets (136) and fender (129). Discard washers and nuts.

51. Remove three self-locking nuts (156), three capscrews (154), six flat washers (155), and three mounting brackets (136) from fender (129). Discard hardware.



VEHICLE PREPARATION (continued)

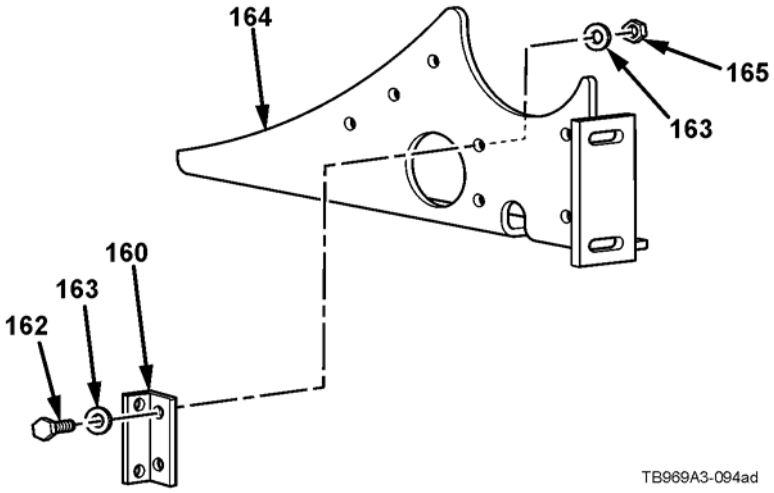
52. Remove four self-locking nuts (161), four capscrews (158), eight flat washers (159), and two angle brackets (160) from two mounting brackets (136). Retain angle bracket for reinstallation. Discard mounting brackets and hardware.



NOTE

The roadside and curbside tube canister mounting brackets and mounting hardware are obtained from the FTSS Kit 57K4864 and installed at this point to ensure of a proper fit of the hose tubes after the FTSS application has been applied.

53. Install two angle brackets (160), previously removed, on two tube canister brackets (164) with four capscrews (162), four self-locking nuts (165), and eight flat washers (163).

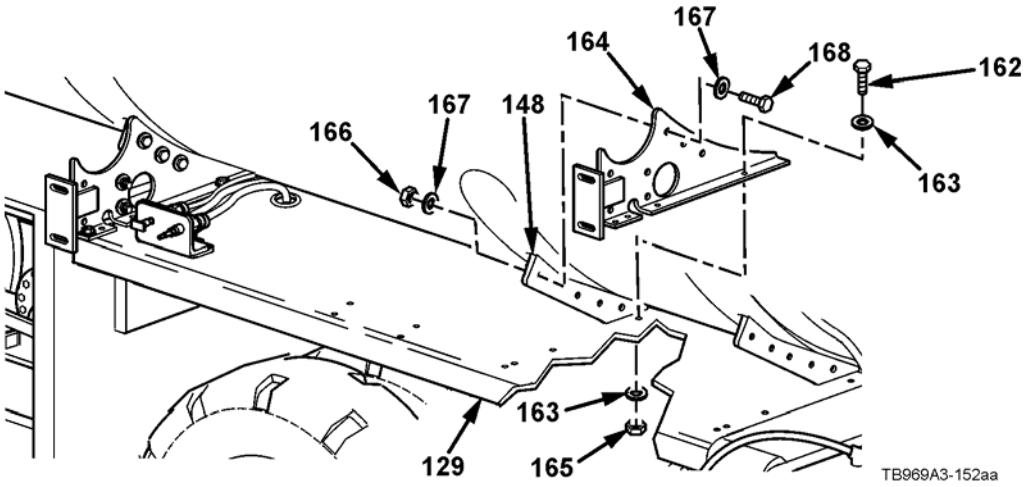


VEHICLE PREPARATION (continued)

54. Install two tube canister brackets (164) on crossmember (148) with six capscrews (168), six self-locking nuts (166), and twelve flat washers (167). Do not tighten hardware.

55. Install two tube canister brackets (164) on fender (129) with eight flat washers (163), four capscrews (162), and four self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).

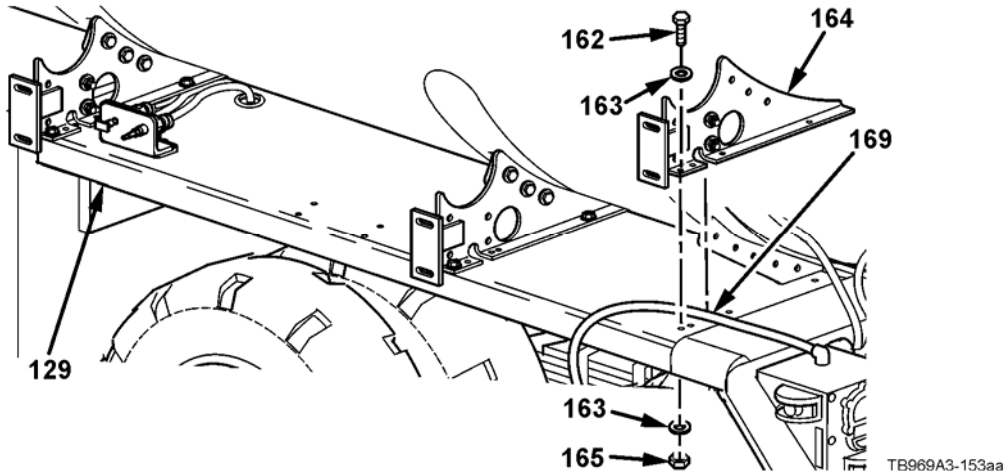
56. Torque self-locking nuts (166) to 55-65 lb-ft (71-88 N•m).



NOTE

The rear fender tube canister bracket does not mount to a crossmember.

57. Position tube canister bracket (164) on fender (129), ensure tube canister bracket (164) captures ABS marker light cable (169) through slot, and install with four flat washers (163), two capscrews (162), and two self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).

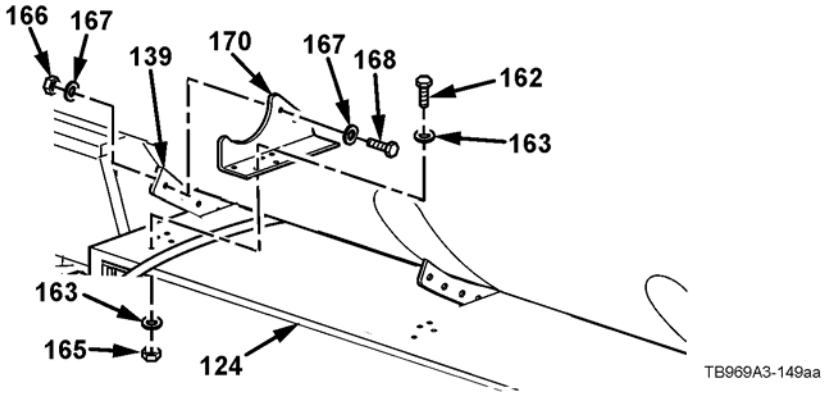


VEHICLE PREPARATION (continued)

58. Install front tube canister bracket (170) on crossmember (139) with four flat washers (167), two capscrews (168), and two self-locking nuts (166). Do not fully tighten hardware.

59. Install front tube canister bracket (170) on hose reel housing (124) with six flat washers (163), three capscrews (162), and three self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).

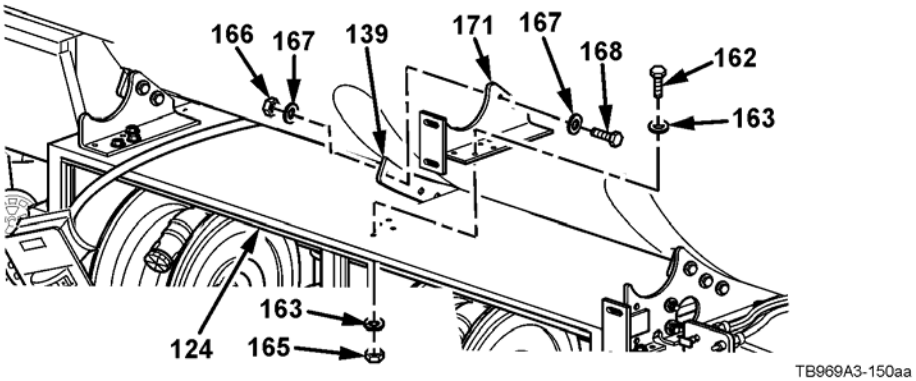
60. Torque self-locking nuts (166) to 55-65 lb-ft (71-88 N•m).



61. Install center tube canister bracket (171) on cross member (139) with four flat washers (165), two capscrews (168), and two self-locking nuts (166). Do not fully tighten hardware.

62. Install center tube canister bracket (171) on hose reel housing (124) with six flat washers (163), three capscrews (162), and three self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).

63. Torque self-locking nuts (166) to 55-65 lb-ft (71-88 N•m).

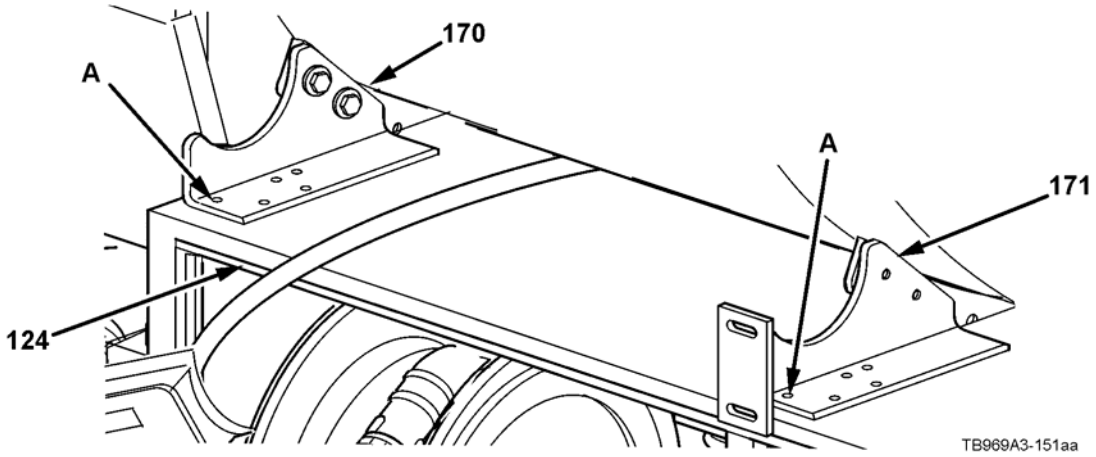


VEHICLE PREPARATION (continued)

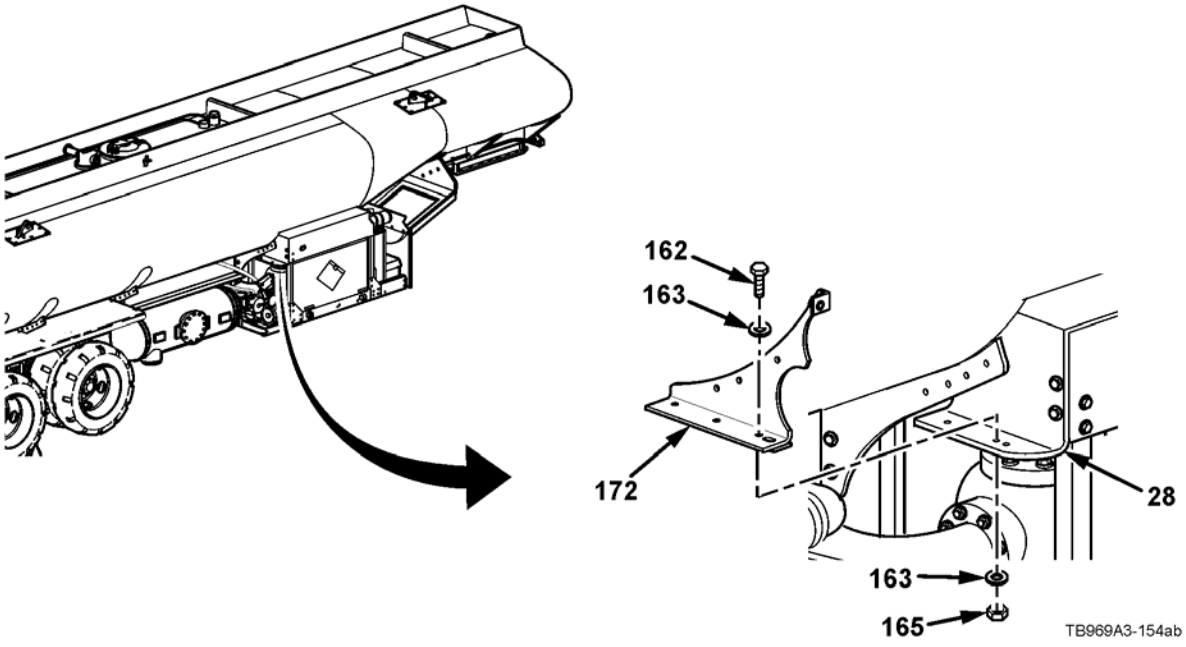
NOTE

The two drilled through holes are to reposition the hose tube retaining straps when installed.

64. Using 19/32 drill bit, drill two holes, marked A, through hose reel housing (124) using front tube canister bracket (170) and center tube canister bracket (171) as templates, as shown.



65. Install tube canister bracket (172) on engine compartment (28) with four flat washers (163), two capscrews (162), and two self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).

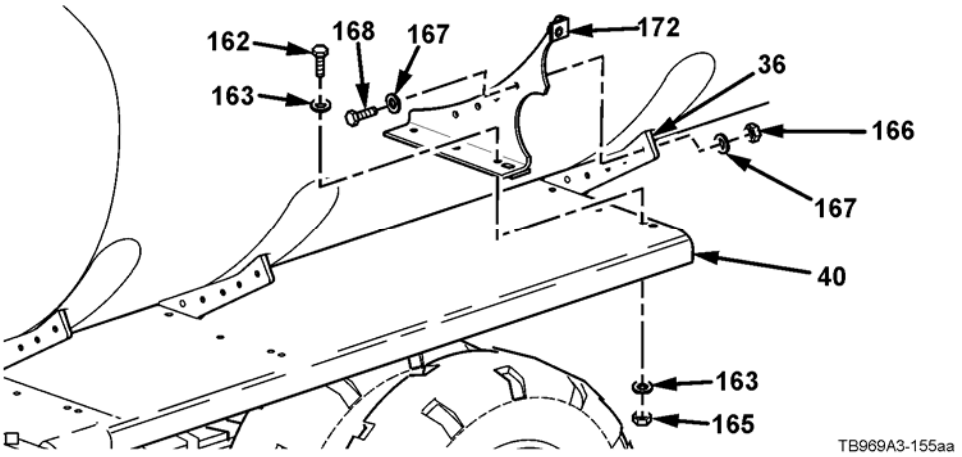


VEHICLE PREPARATION (continued)

66. Position two tube canister brackets (172) on crossmembers (36) and fender (40). Align holes of two tube canister brackets (172) with existing holes of crossmembers (36) and install with sixteen flat washers (167), eight capscrews (168), and eight self-locking nuts (166). Do not fully tighten hardware.

67. Install two tube canister brackets (172) on fender (40) with twelve flat washers (163), six capscrews (162), and six self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).

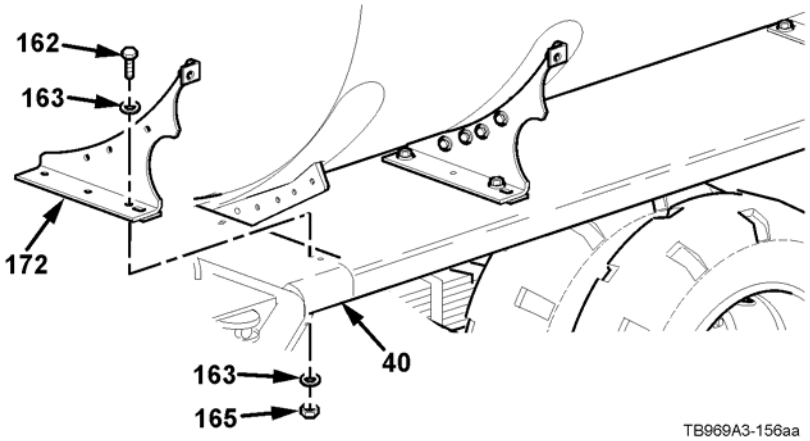
68. Torque self-locking nuts (166) to 55-65 lb-ft (71-88 N•m).



NOTE

The rear fender tube canister bracket does not mount to a crossmember.

69. Install rear tube canister bracket (172) on fender (40) with four flat washers (163), two capscrews (162), and two self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).



NOTE

Vehicle preparation has been completed. Forward the semittrailer to the appropriate facility for FTSS application.

FTSS SYSTEM PROCEDURE

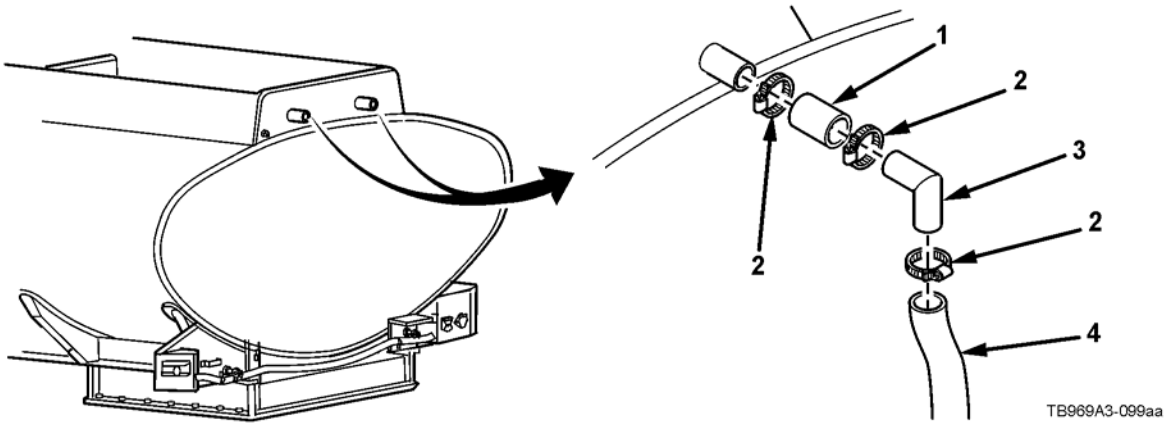
The source and application of the FTSS System is proprietary. For vehicle preparation, applications, and reapplication of the FTSS System, contact VSE Corporation, 2550 Huntington Avenue, Alexandria, VA 22303-1499. Or you may submit your request by phone (800) 455-4873 or fax (703) 960-2688.

INITIAL INSTALLATION

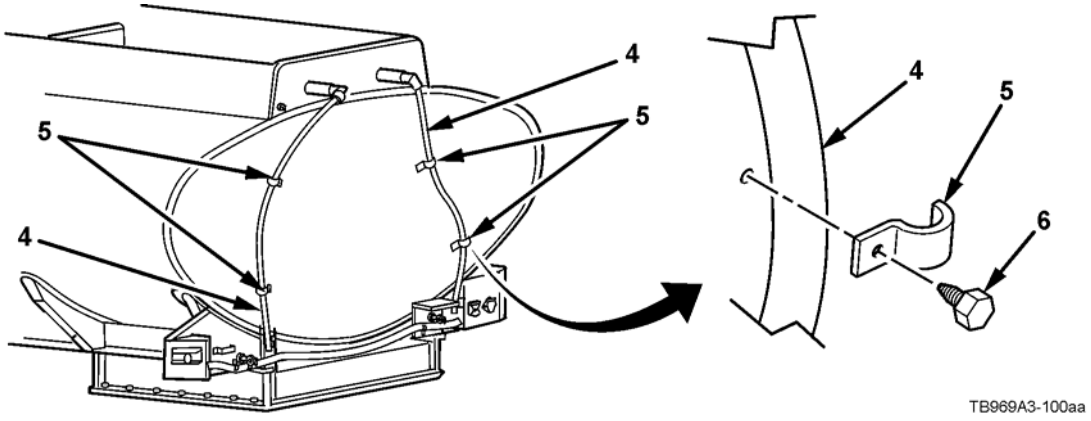
NOTE

- Perform the following task after the FTSS coating has been applied, dried, and inspected.
- Refer to table 3-1, FTSS Kit Contents List, for a list of all components installed during this procedure.

1. Cut two hoses (1) 5 inches (13 cm) from bulk rubber hose.
2. Cut two hoses (4) 42 inches (107 cm) from bulk rubber hose.
3. Install two drain hoses (1) and drain hose nipples (3) on semitrailer with four tube clamps (2).
4. Install two drain hoses (4) on drain hose nipples (3) with two tube clamps (2).

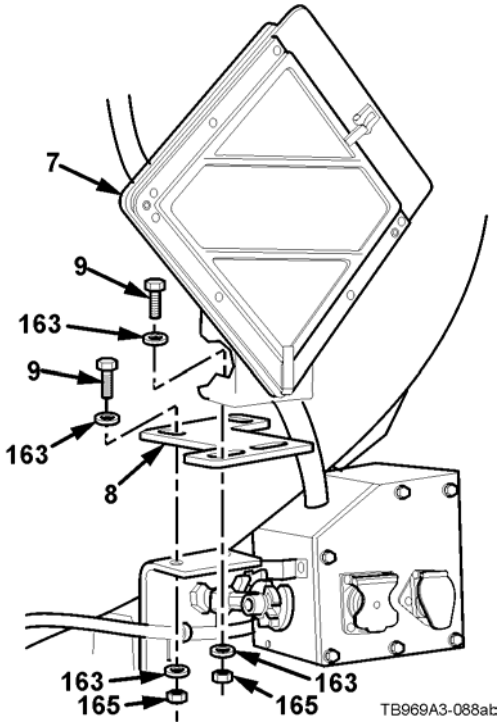


5. Install two drain hoses (4) on semitrailer with four universal conduit clips (5) and four thread forming screws (6).

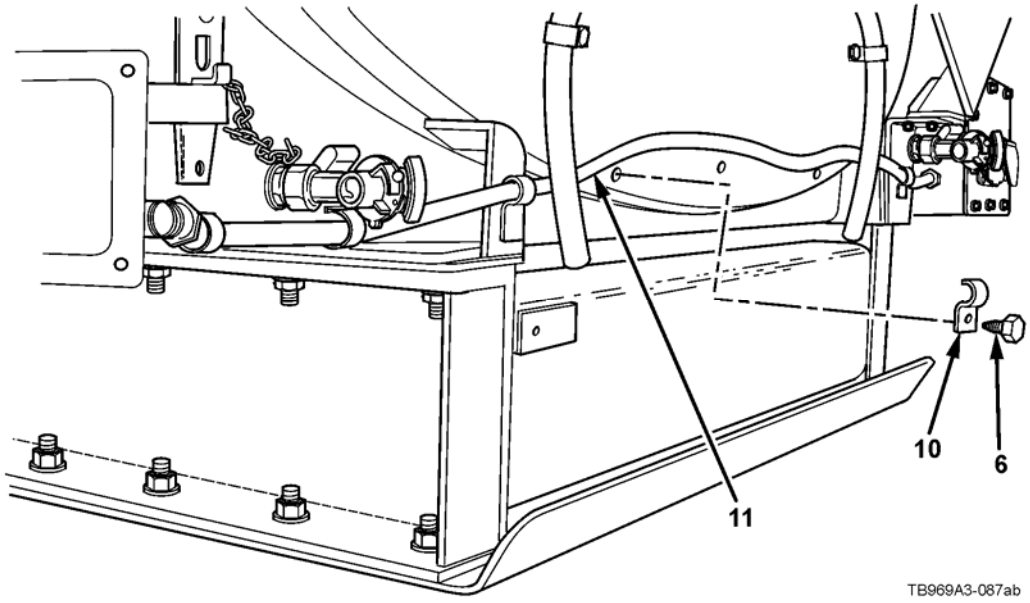


INITIAL INSTALLATION (continued)

6. Install front placard support (8) on front of semitrailer with four flat washers (163), two capscrews (9), and two self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).
7. Install hazardous materials placard bracket (7) on front placard support (8) with four flat washers (163), two capscrews (9), and two self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).

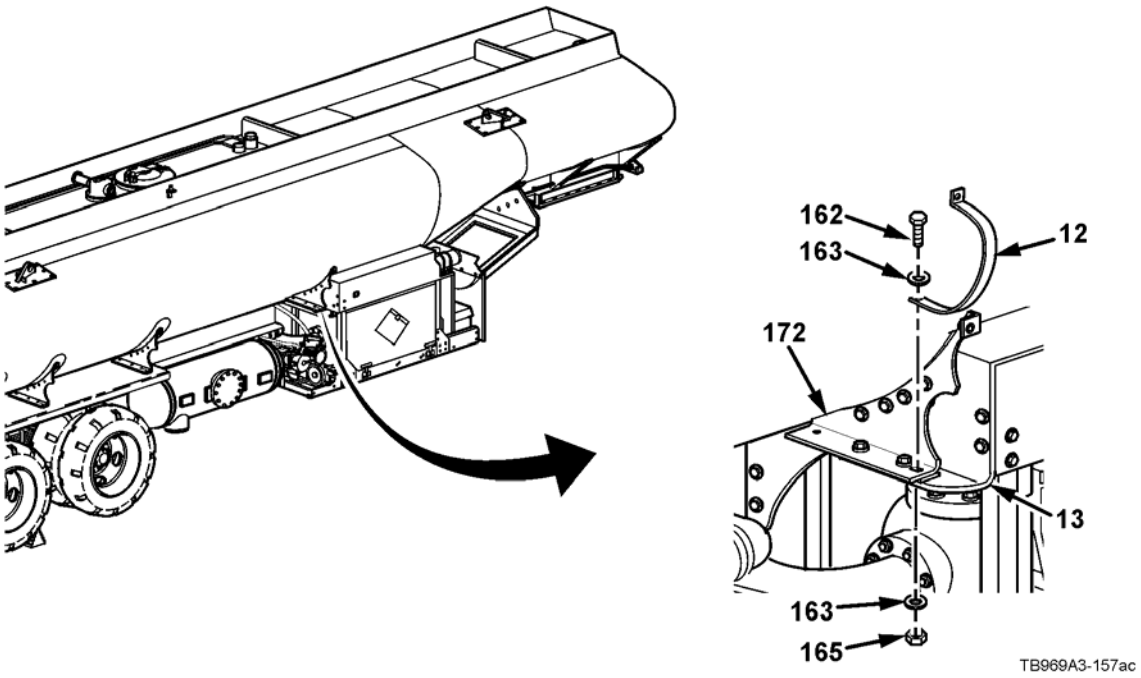


8. Install electrical conduit (11) on semitrailer with three universal conduit clips (10) and three thread forming nuts (6).

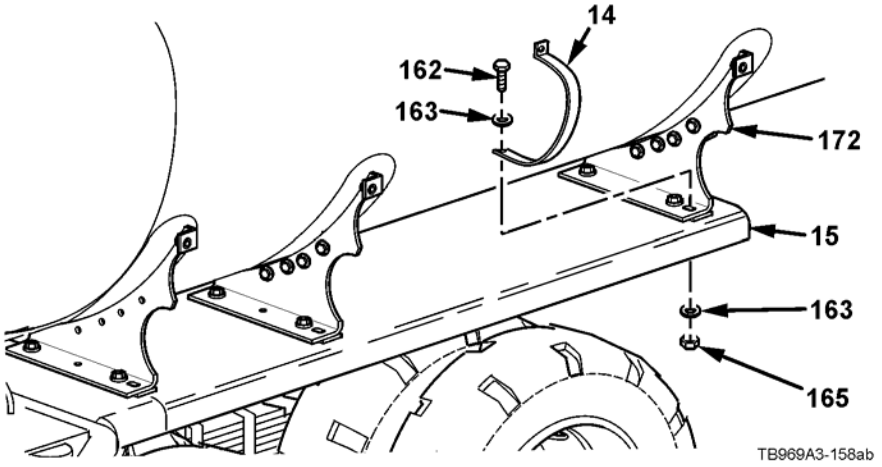


INITIAL INSTALLATION (continued)

9. Install retaining strap (12), previously removed, on tube canister bracket (172) and engine compartment (13) with two flat washers (163), capscrew (162), and self-locking nut (165). Torque self-locking nut to 30-35 lb-ft (41-48 N•m).



10. Install two retaining straps (14), previously removed, on two tube canister brackets (172) and fender (15) with two flat washers (163), capscrew (162), and self-locking nut (165). Torque self-locking nut to 30-35 lb-ft (41-48 N•m).

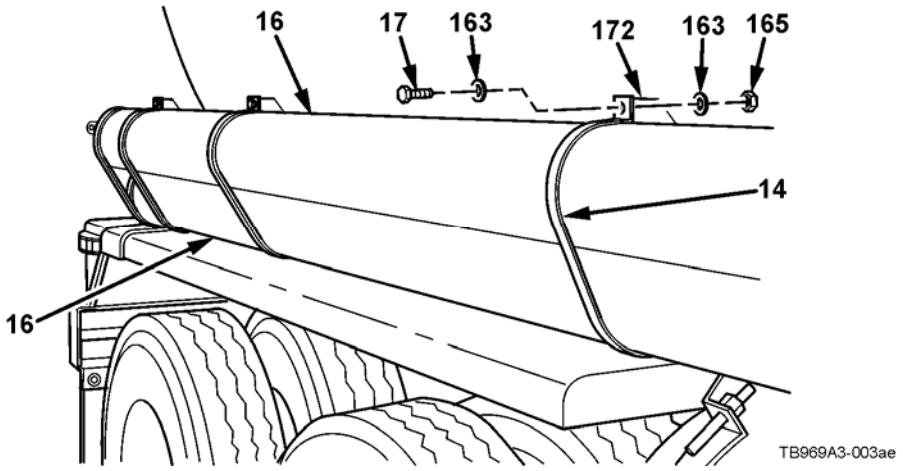


INITIAL INSTALLATION (continued)

NOTE

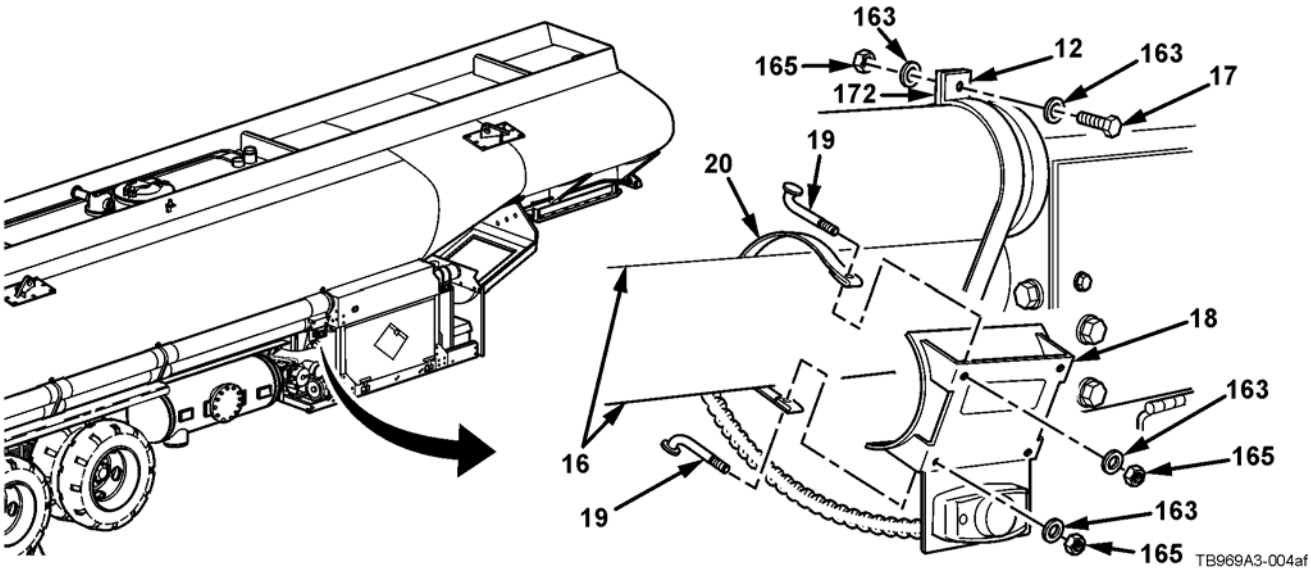
An assistant will help with Steps 11 and 12.

11. Install two hose tubes (16) on tube canister brackets (172) and secure in place with three retaining straps (14), six flat washers (163), three capscrews (17), and three self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).



12. Install retaining strap (12) on two hose tubes (16) and tube canister bracket (172) with two flat washers (163), capscrew (17), and self-locking nut (165). Torque self-locking nut to 30-35 lb-ft (41-48 N•m).

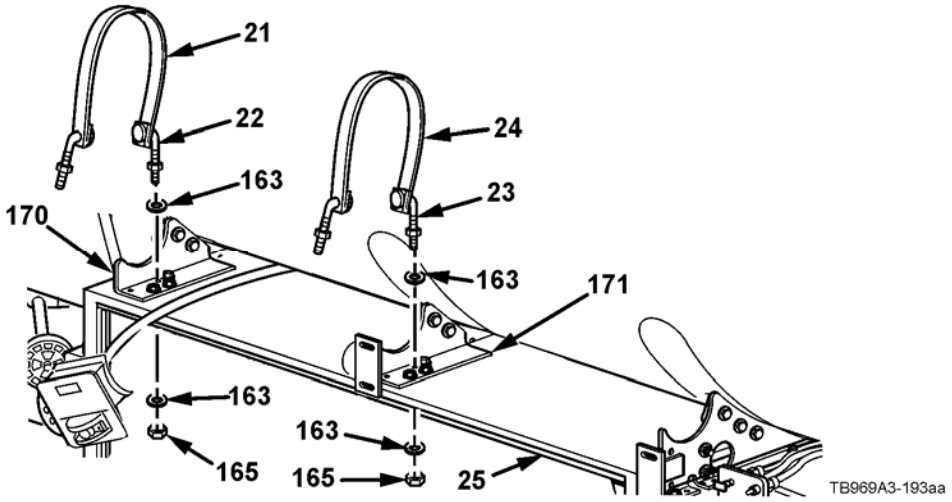
13. Install side marker light box (18) on hose tube (16) with two retaining straps (20), four J-bolts (19), four self-locking nuts (165), and four flat washers (163).



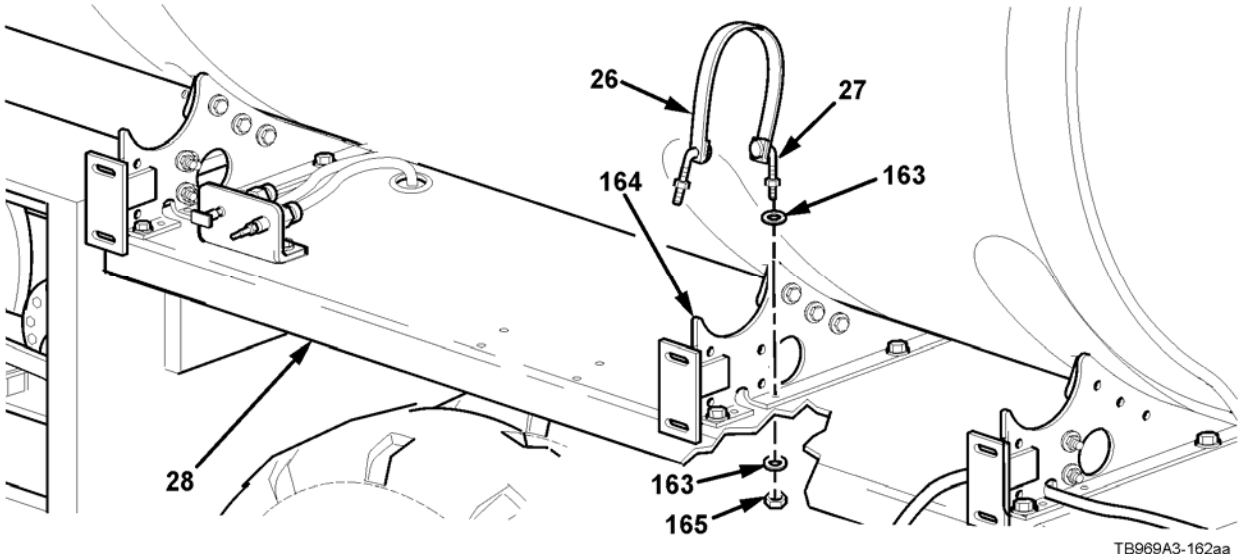
INITIAL INSTALLATION (continued)

14. Install retaining strap (21), previously removed, on tube canister bracket (170) and hose reel housing (25) with two flat washers (163), J-bolt (22), and self-locking nut (165).

15. Install retaining strap (24), previously removed, on tube canister bracket (171) and hose reel housing (25) with two flat washers (163), J-bolt (23), and self-locking nut (165).

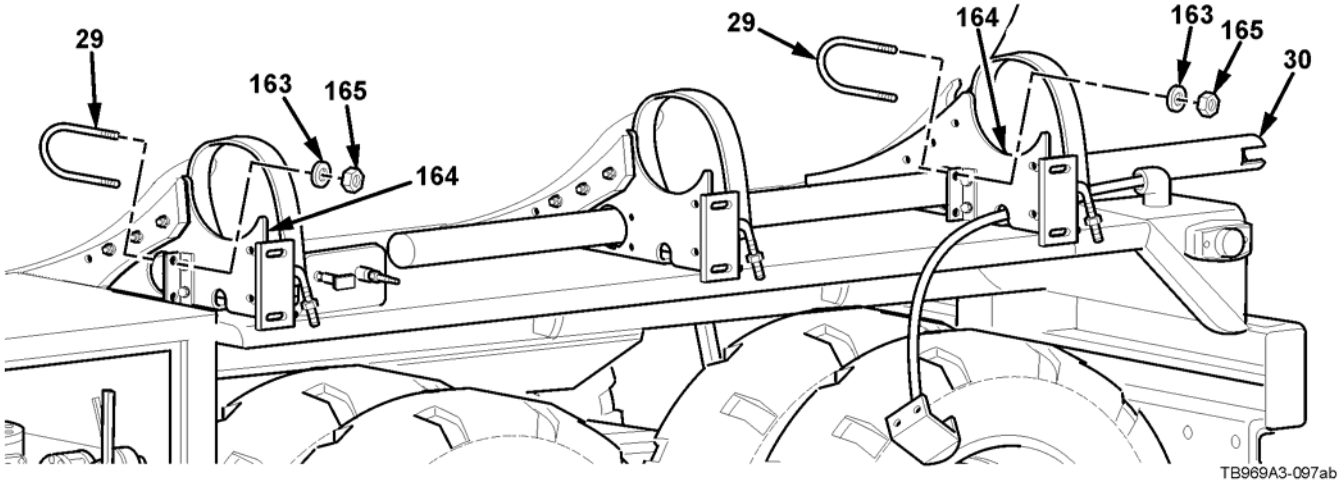


16. Install three retaining straps (26), previously removed, on three tube canister brackets (164) and fender (28) with six flat washers (163), three J-bolts (27), three self-locking nuts (165). Do not fully tighten hardware.



INITIAL INSTALLATION (continued)

17. Insert ground rod storage tube (30) through three mounting brackets (164) and install with two U-bolts (29), previously removed, four flat washers (163), and four self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).



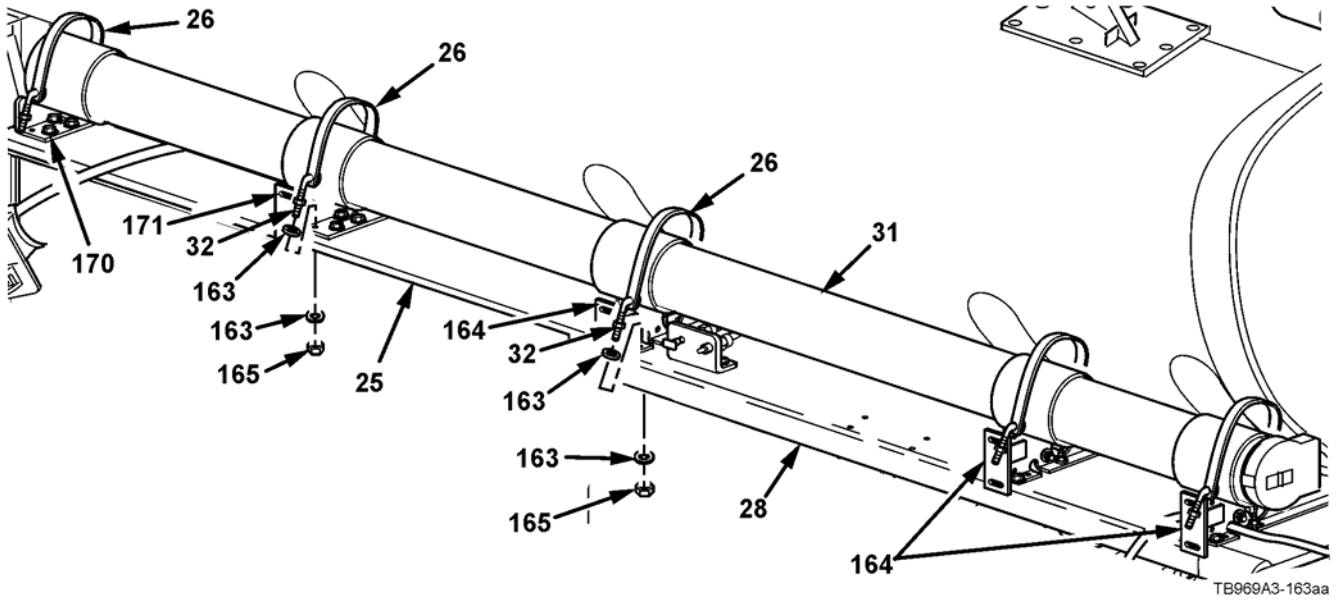
NOTE

An assistant will help with Steps 22 and 23.

18. Position hose tube (31) on tube canister brackets (170) and (171) and three tube canister brackets (164).

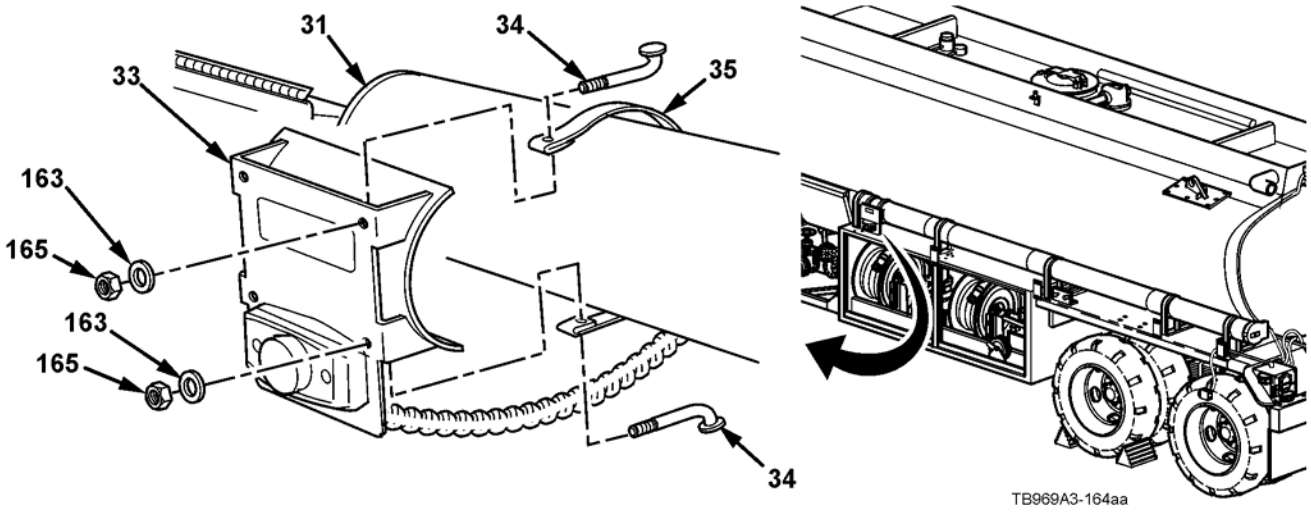
19. Install hose tube (31) on hose reel housing (25) and tube canister brackets (170) and (171) with retaining straps (26), four flat washers (163), four J-bolts (32), and two self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).

20. Install hose tube (31) on three tube canister brackets (164) and fender (28) with three retaining straps (26), three J-bolts (32), six flat washers (163), and three self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).



INITIAL INSTALLATION (continued)

21. Install marker light box (33) on hose tube (31) with two retaining straps (35), four J-bolts (34), four flat washers (163), and four self-locking nuts (165).

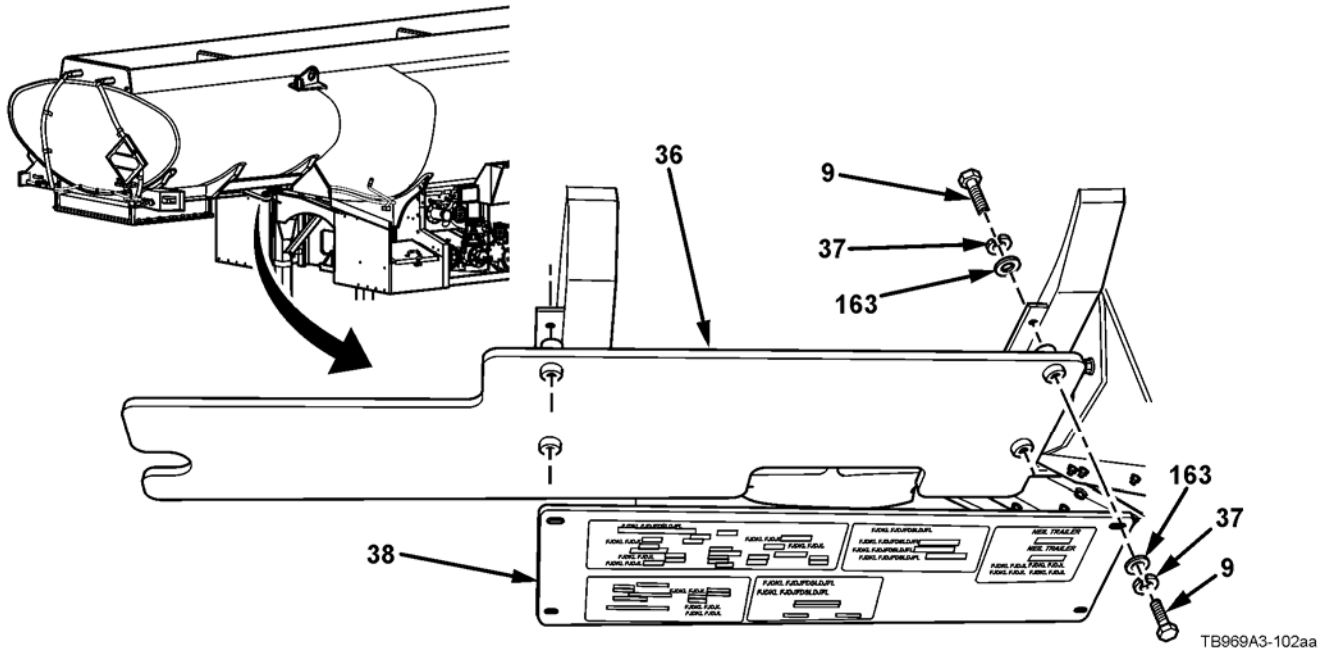


NOTE

An assistant will help with Step 26.

22. Install side panel (36) on semitrailer with four capscrews (9), four lockwashers (37), and four flat washers (163). Torque capscrews to 30-35 lb-ft (41-48 N•m).

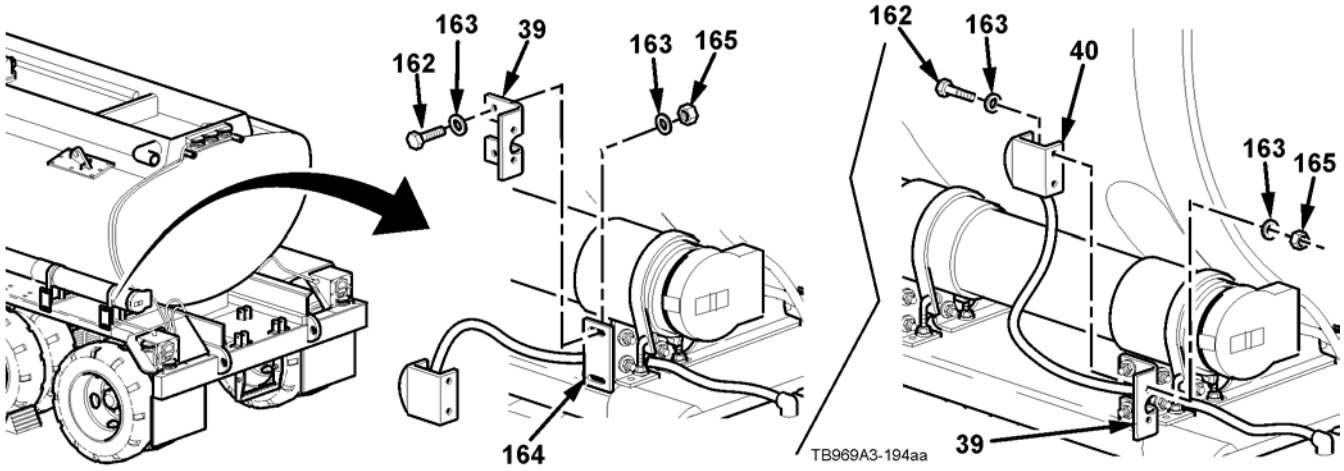
23. Install vehicle identification panel (38), previously removed, on semitrailer vehicle with four capscrews (9), four lockwashers (37), and four flat washers (163). Torque capscrews to 30-35 lb-ft (41-48 N•m).



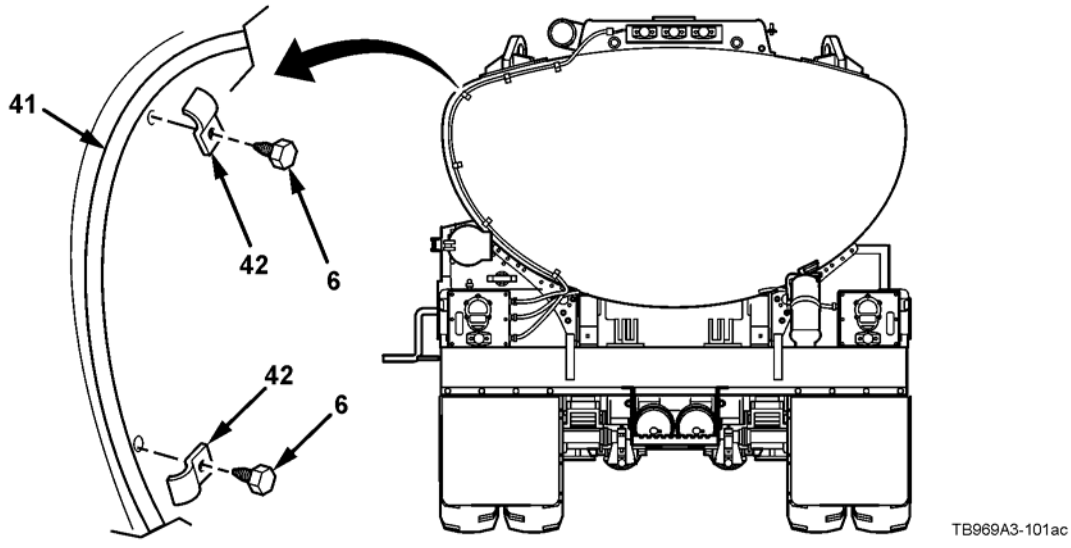
INITIAL INSTALLATION (continued)

24. Install rear light bracket (39) on rear tube canister bracket (164) with two capscrews (162), four flat washers (163), and two self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).

25. Install ABS marker light (40) on rear light bracket (39) with two capscrews (162), four flat washers (163), and two self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).

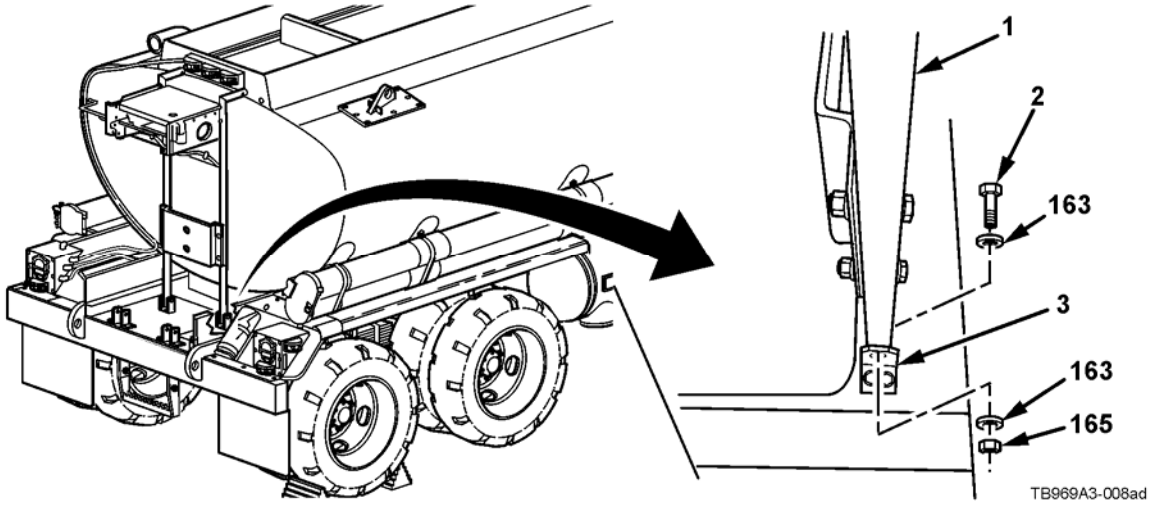


26. Install electrical conduit (39) on semitrailer with six universal conduit clips (40) and six thread forming screws (6).

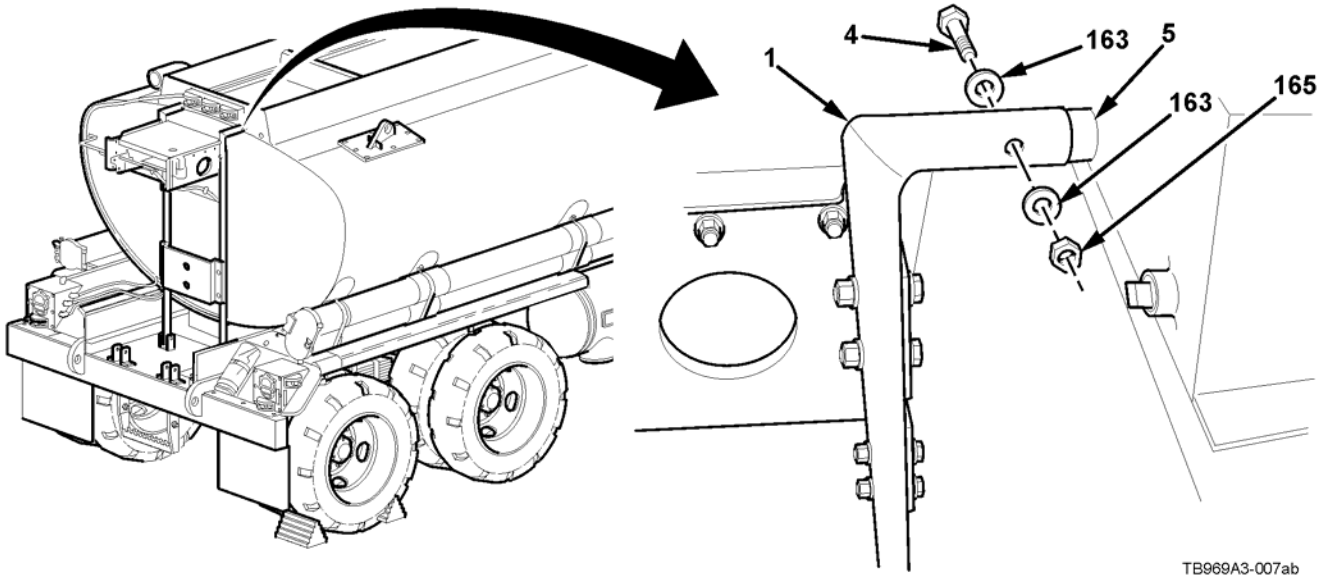


FOLLOW-ON TASK

1. Position spare tire support and roadside drain pipe (1) on the semitrailer. Install spare tire support and roadside drain pipe (1) on bottom support bracket (3) with four new flat washers (163), two capscrews (2), and two new self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).

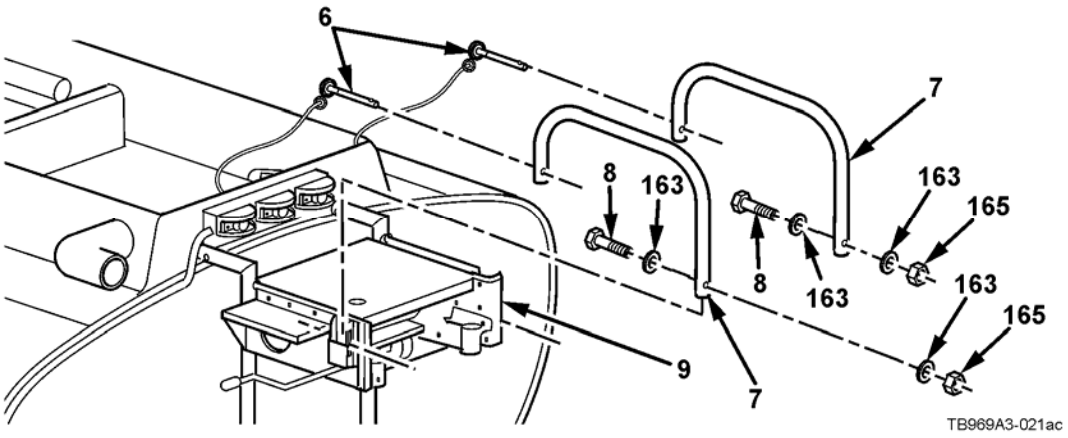


2. Install spare tire support and roadside drain pipe (1) on left and right channels (5) four new flat washers (163), two capscrews (4), and two new self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).

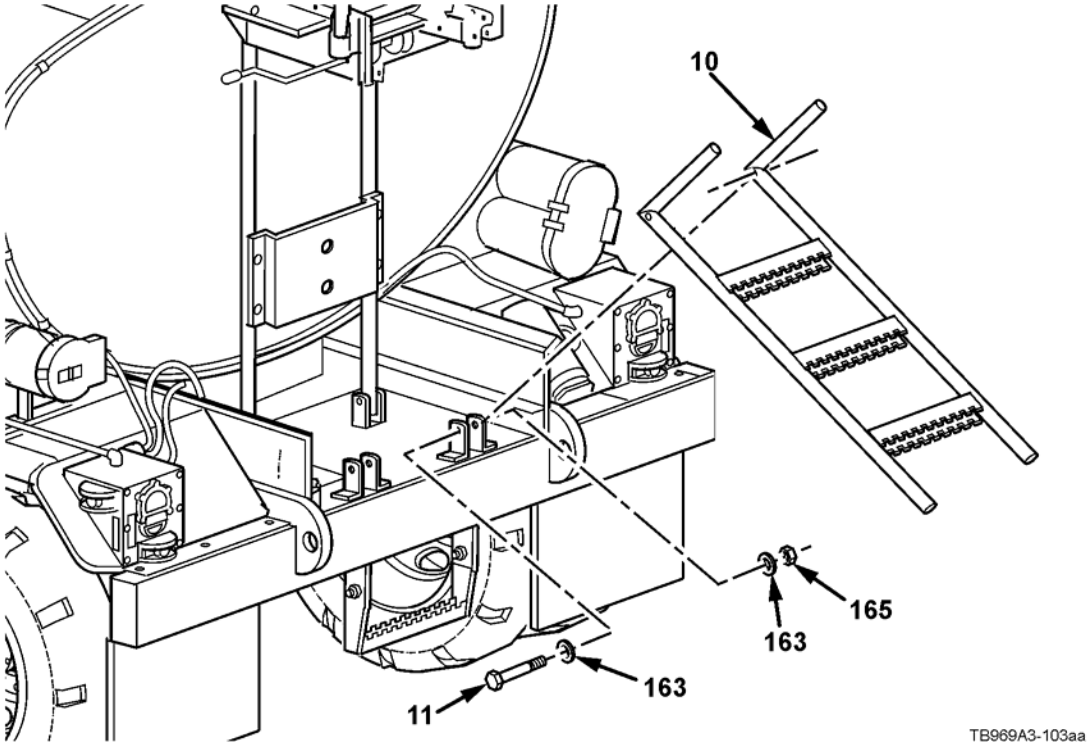


FOLLOW-ON TASK (continued)

3. Position two handrails (7) on platform support (9) and secure using two retaining pins (6), four new flat washers (163), two capscrews (8), and two new self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).



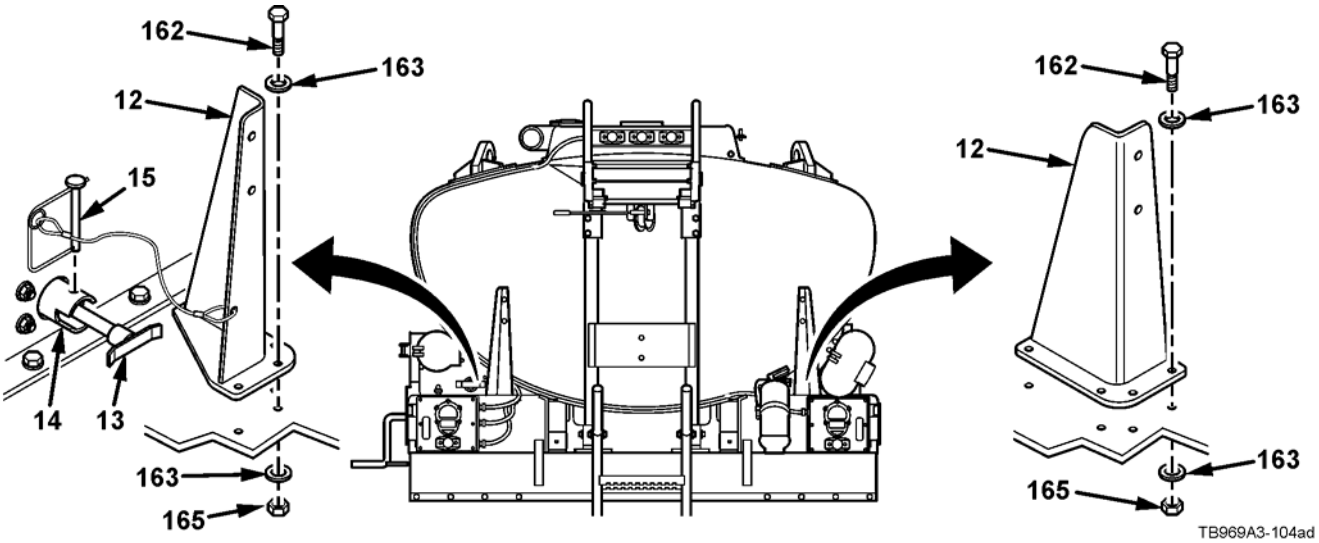
4. Install ladder (10) on semitrailer with four new flat washers (163), two capscrews (11), and two new self-locking nuts (165). Do not fully tighten hardware.



FOLLOW-ON TASK (continued)

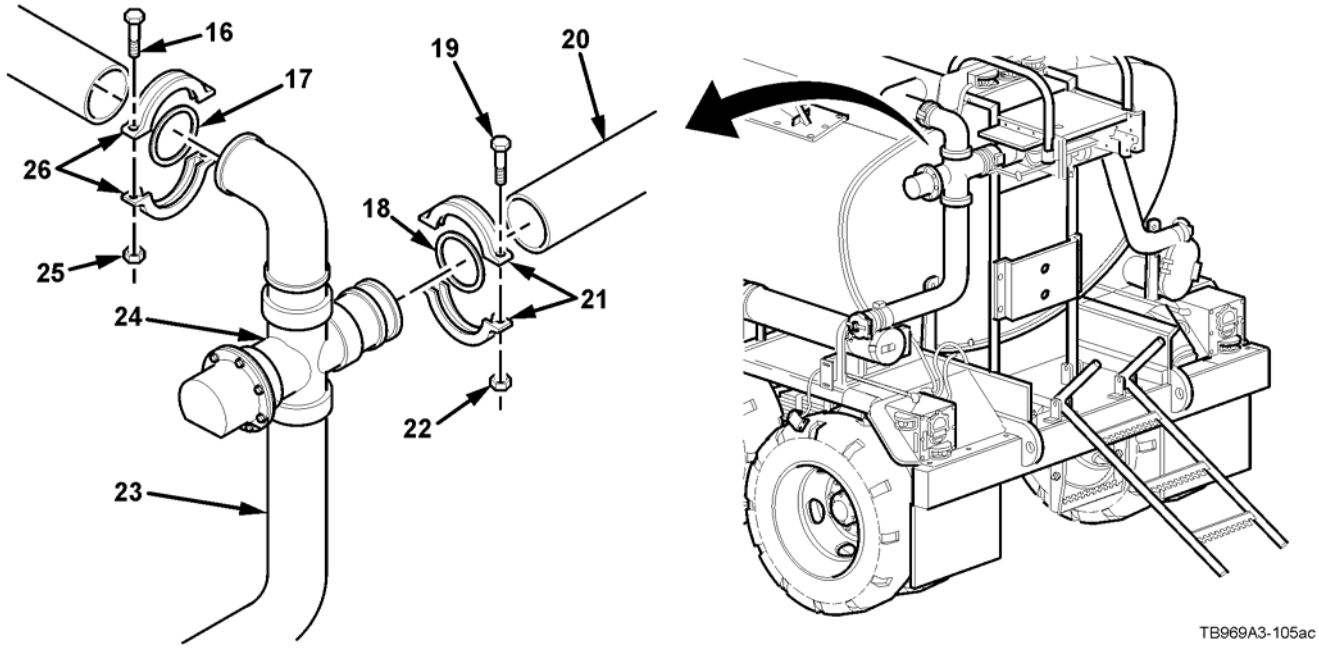
5. Install two brackets (12) on semitrailer with sixteen flat washers (163), eight capscrews (162), and eight new self-locking nuts (165). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).

6. Insert ground rod (13) into ground rod storage tube (14) and secure with retaining pin (15).



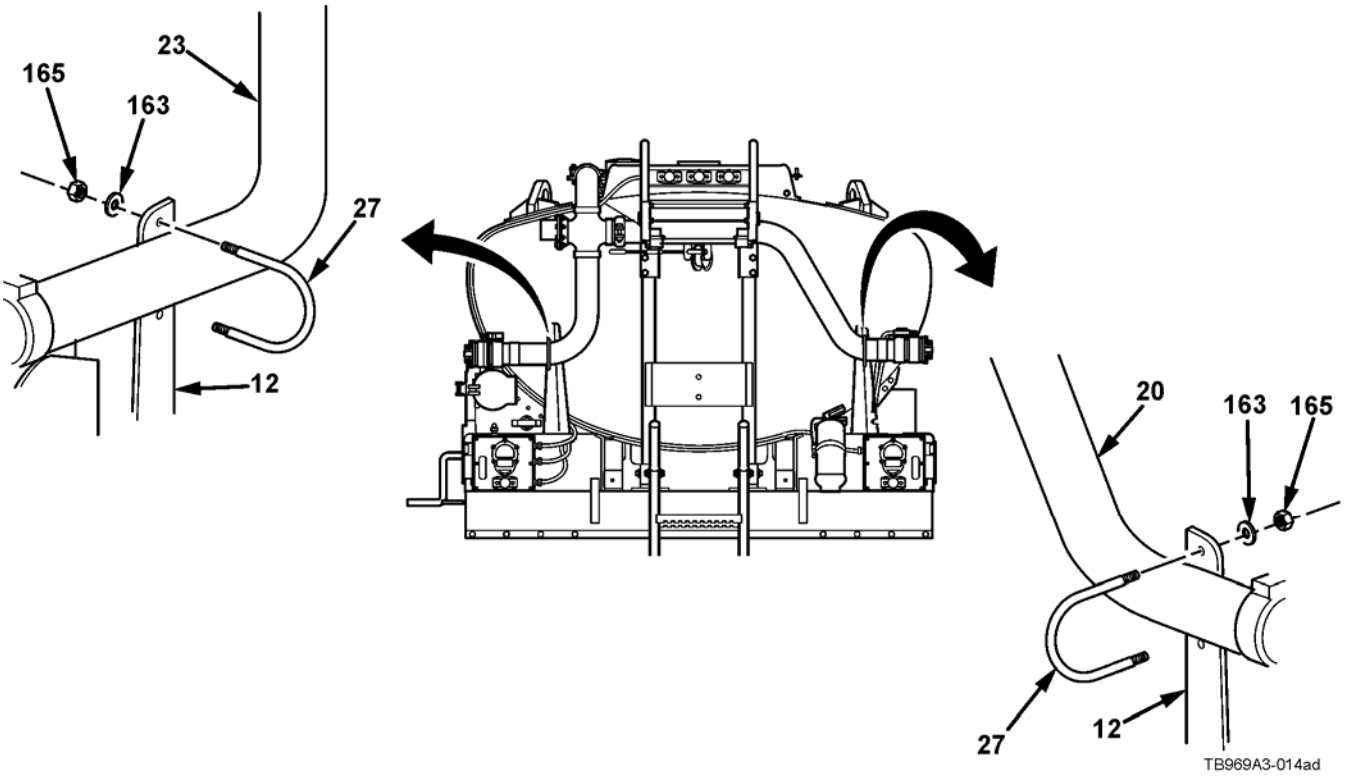
7. Install cross assembly (24), with pipe (23) attached, on semitrailer with seal (17), split-pipe couplings (26), two capscrews (16) and two nuts (25).

8. Install pipe (20) on cross assembly (24) with seal (18), split-pipe couplings (21), two capscrews (19), and two nuts (22).

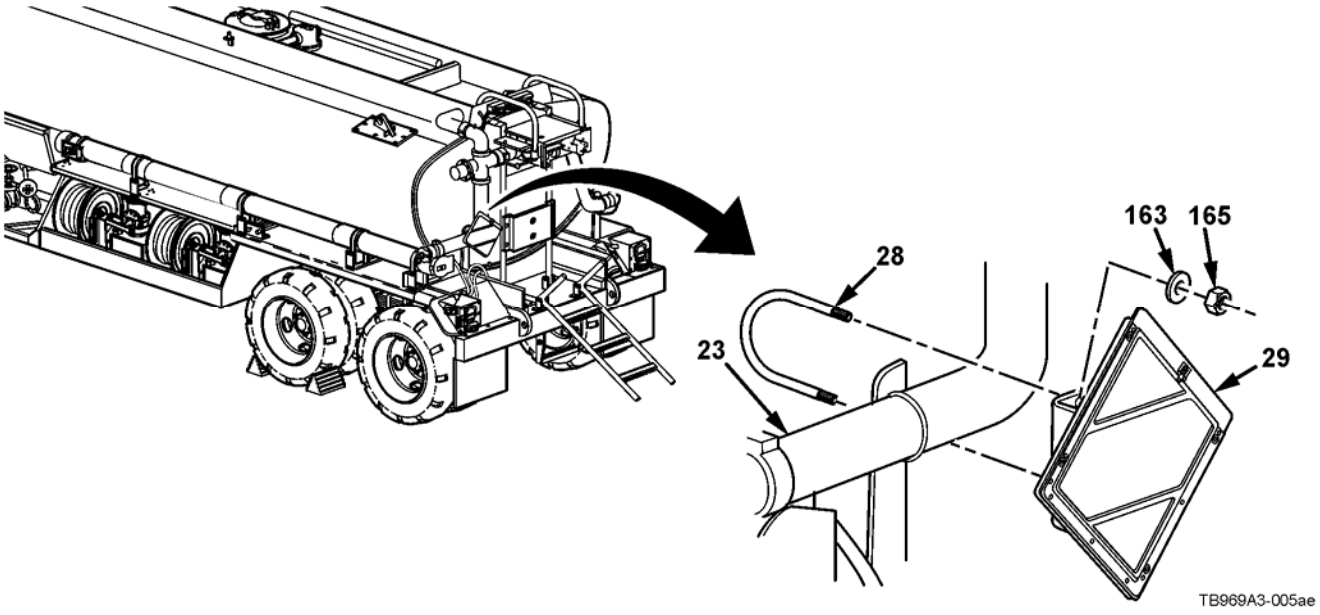


FOLLOW-ON TASK (continued)

9. Install pipes (20) and (23) on brackets (12) with two U-bolts (27), four new flat washers (163), and four new self-locking nuts (165).

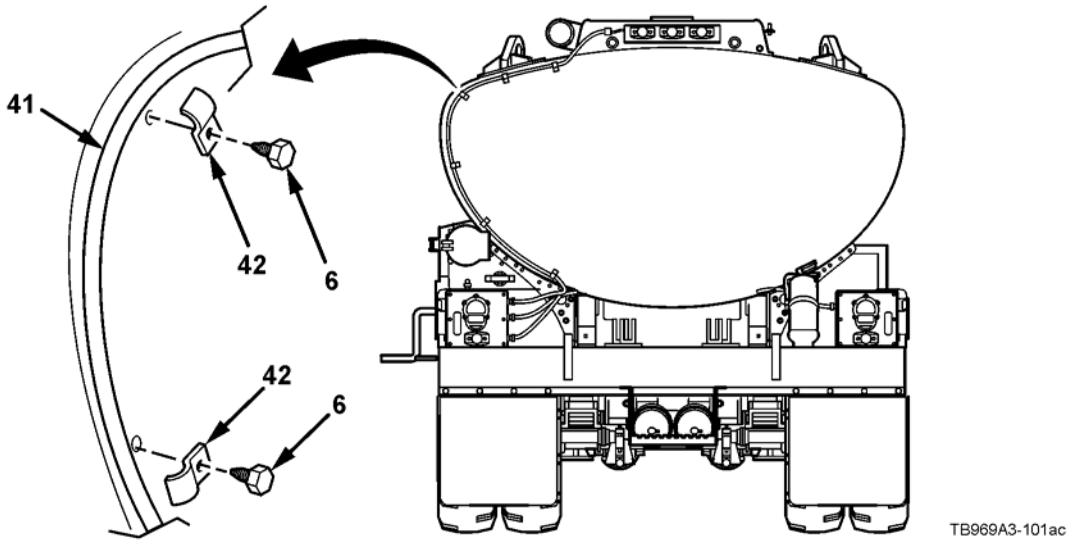


10. Install hazardous materials placard bracket (29) on pipe (23) with U-bolt (28), two new flat washers (163), and two new self-locking nuts (165).



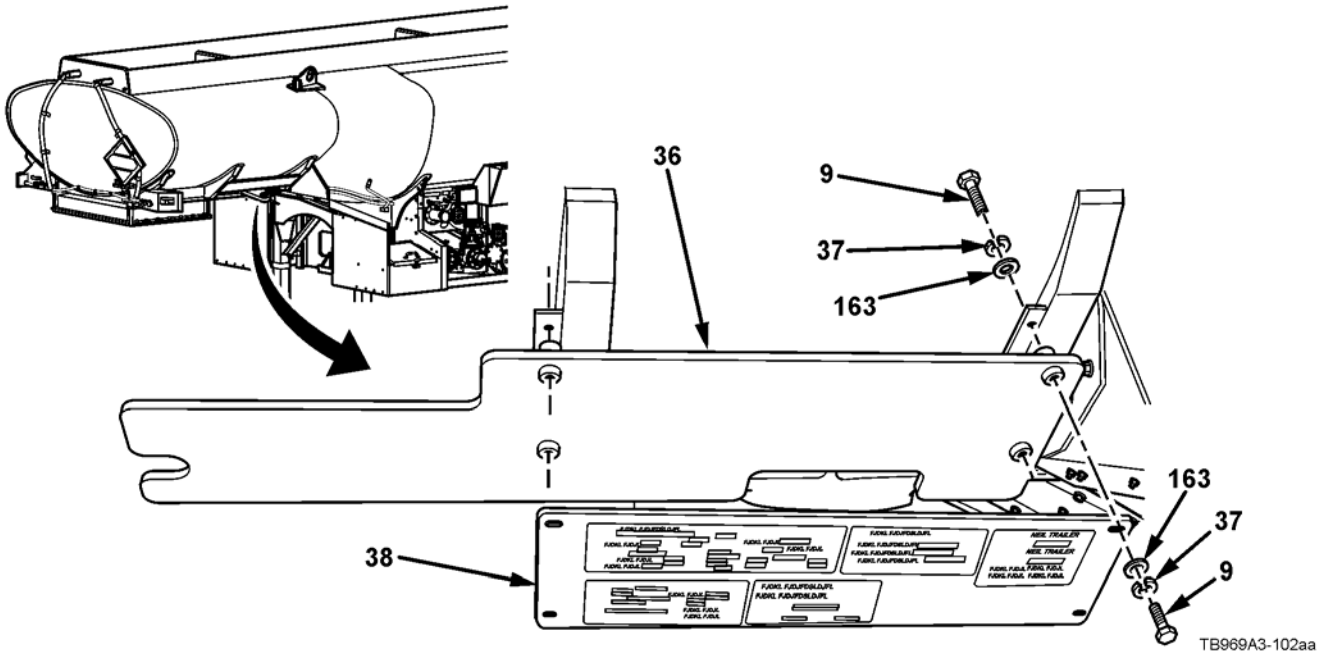
REMOVAL/REPLACEMENT

1. Remove six thread forming screws (6), six universal conduit clips (42), and conduit (41) from semitrailer.



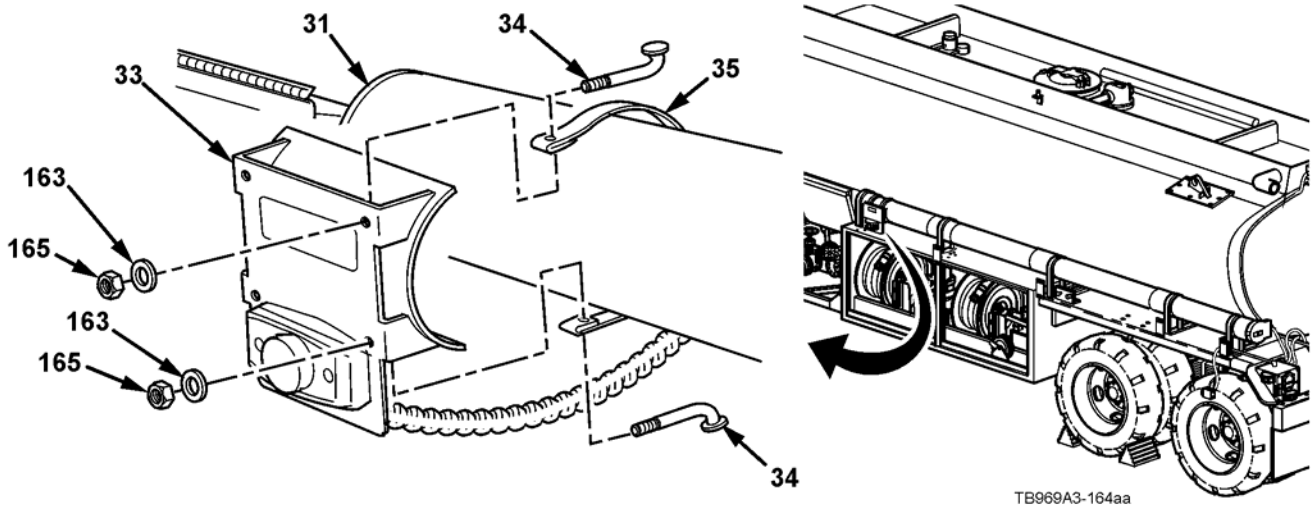
2. Remove four capscrews (9), four flat washers (163), four lockwashers (37), and identification plate (38) from side panel (36). Discard lockwashers.

3. Remove four capscrews (9), four flat washers (163), four lockwashers (37), and side panel (36) from semitrailer. Discard lockwashers.



REMOVAL/REPLACEMENT (continued)

4. Remove four self-locking nuts (165), four washers (163), four J-bolts (34), two retaining straps (35), and marker light box (33) from hose tube (31). Discard nuts.



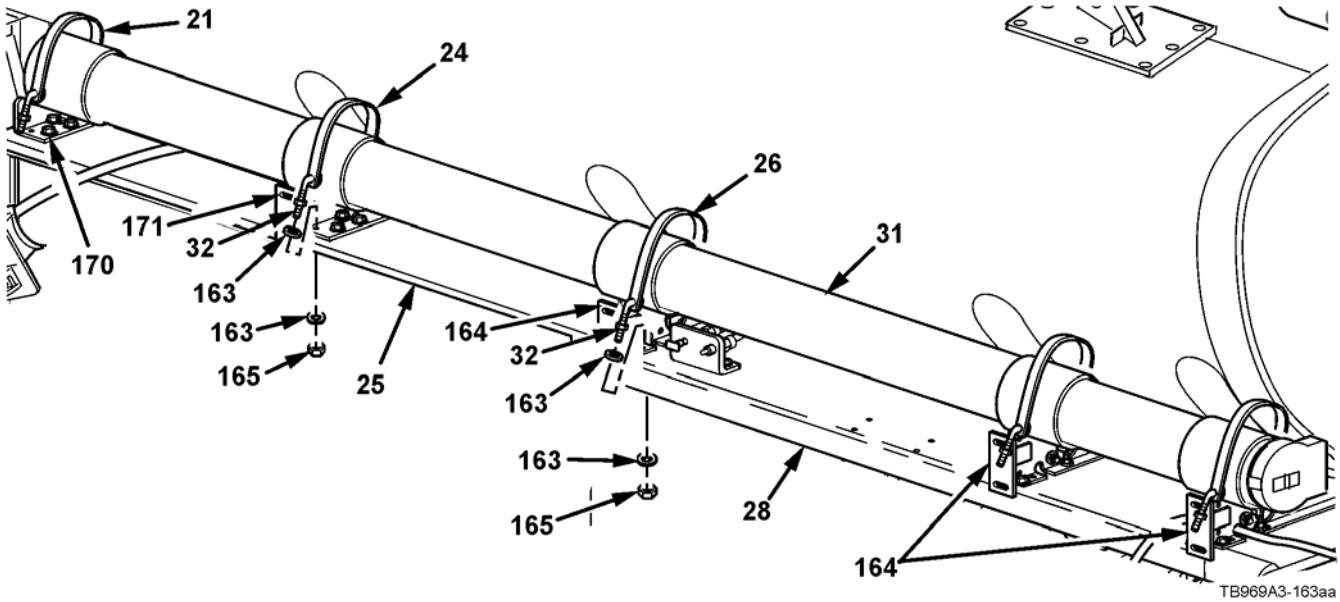
5. Remove two self-locking nuts (165), two J-bolts (32), four flat washers (163), and two retaining straps (21) from hose tube (31), tube canister brackets (170) and (171), and hose reel housing (25). Discard nuts.

6. Remove three self-locking nuts (165), three J-bolts (32), six flat washers (163), and three retaining straps (26) from hose tube (31) and fender (77). Discard nuts.

NOTE

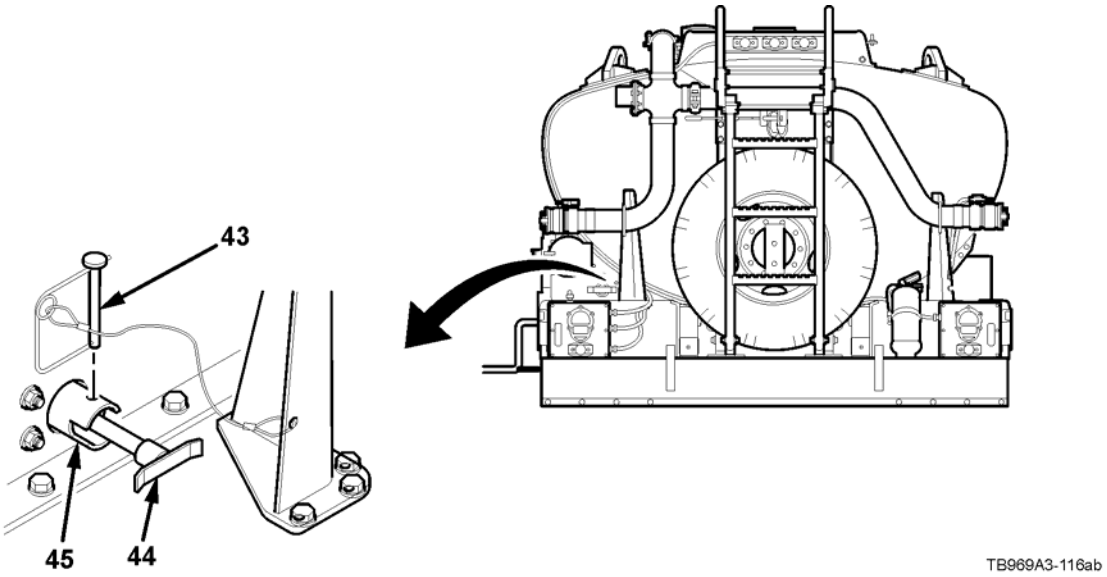
An assistant will help with Step 17.

7. Remove hose tube (31) from semitrailer.



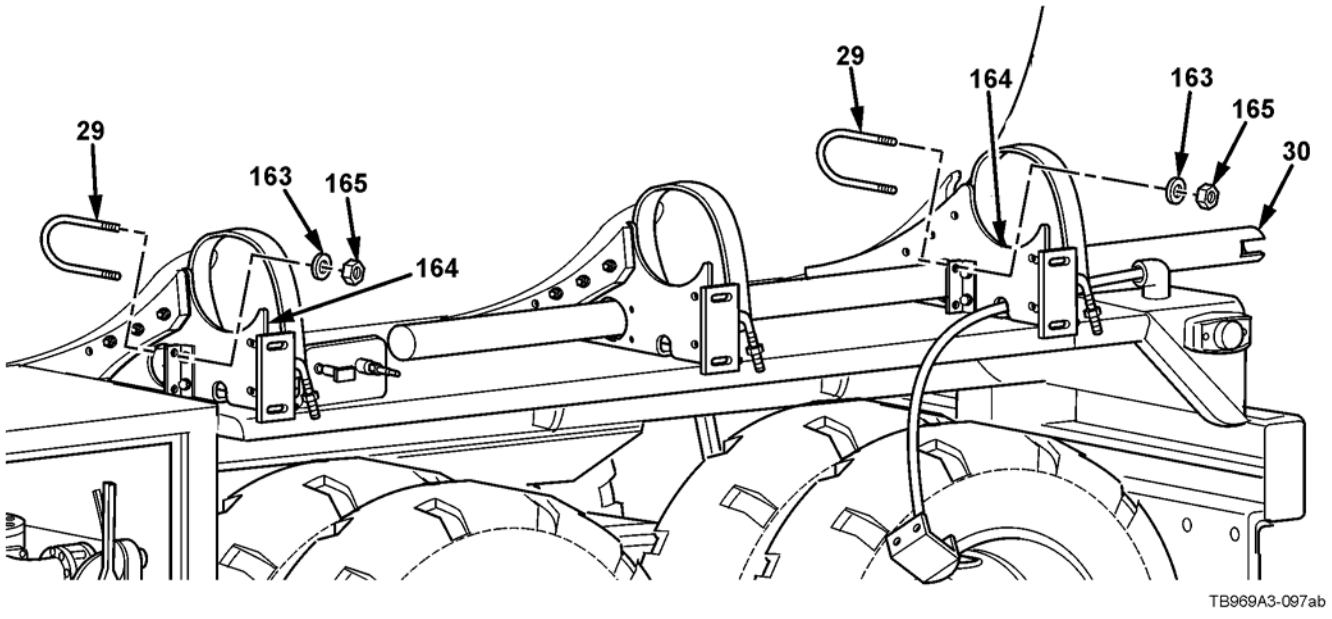
REMOVAL/REPLACEMENT (continued)

8. Remove retaining pin (43) and ground rod (44) from ground rod storage tube (45).



9. Remove six self-locking nuts (165), six flat washers (163), and two U-bolts (29) from two tube canister brackets (164), and ground rod storage tube (30). Discard nuts.

10. Remove ground rod storage tube (30) from three tube canister brackets (164).



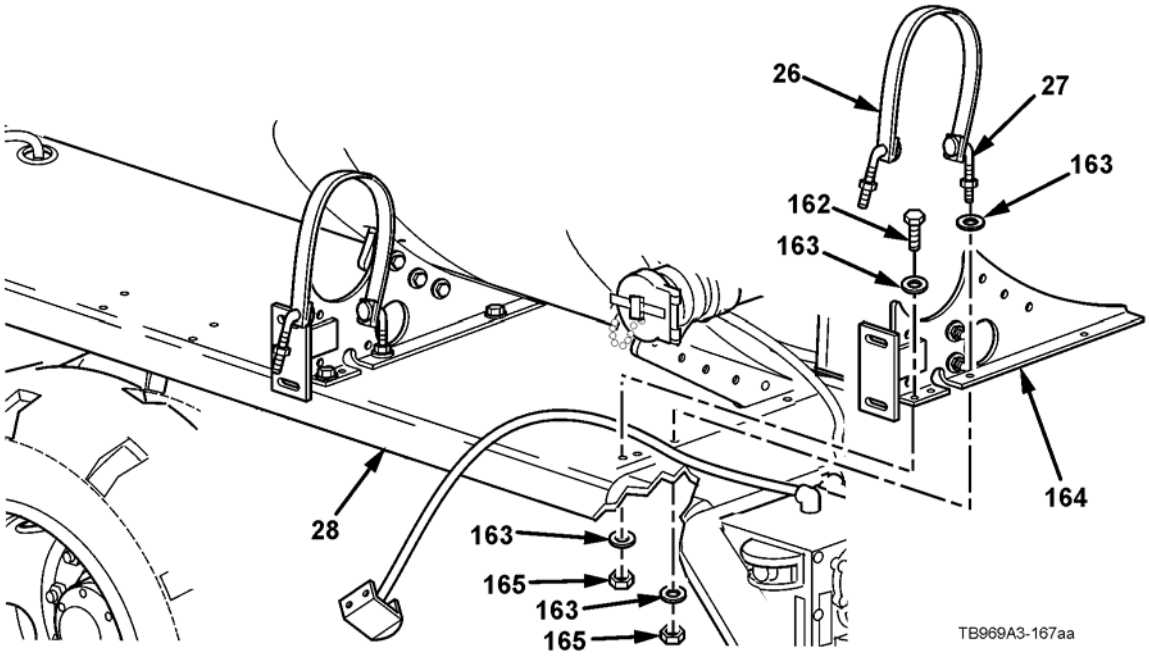
REMOVAL/REPLACEMENT (continued)

NOTE

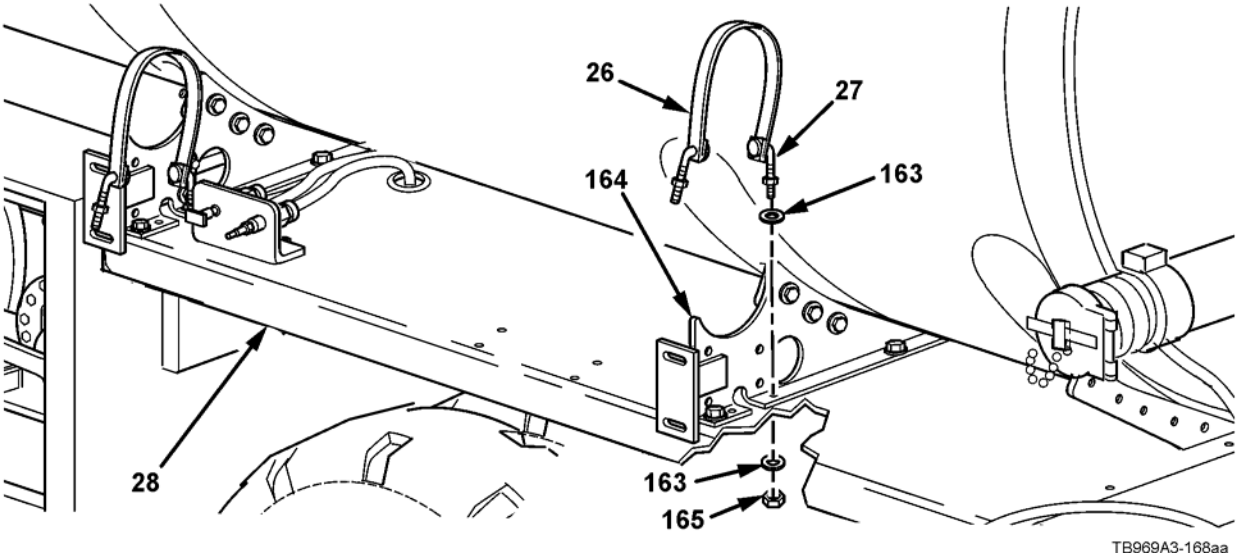
The rear fender tube canister bracket does not mount to a crossmember.

11. Remove self-locking nut (165), two flat washers (163), J-bolt (27), and retaining strap (26) from fender tube canister bracket (164) and fender. Discard nuts.

12. Remove two capscrews (162), two self-locking nuts (165), four flat washers (163), and fender tube canister bracket (164) from fender (28). Discard nuts.



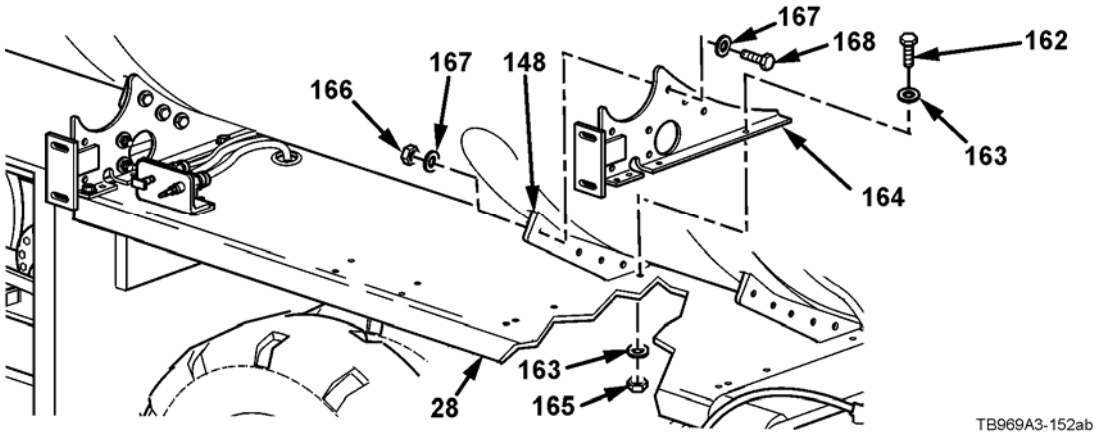
13. Remove two self-locking nuts (165), four flat washers (163), two J-bolts (27), and retaining straps (26) from two fender tube canister brackets (164) and fender (28). Discard nuts.



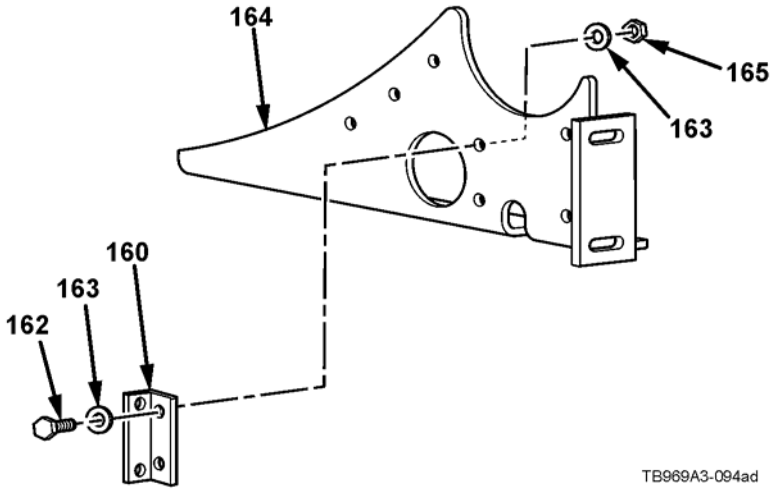
REMOVAL/REPLACEMENT (continued)

14. Remove six capscrews (168), six self-locking nuts (166), twelve flat washers (167), and two tube canister brackets (164) from two crossmembers (24). Discard nuts.

15. Remove two capscrews (162), six self-locking nuts (165), four flat washers (163), and two tube canister brackets (164) from fender (28). Discard nuts.



16. Remove two capscrews (122), two self-locking nuts (165), four flat washers (163), and angle bracket (124) from two tube canister brackets (164). Discard nuts.

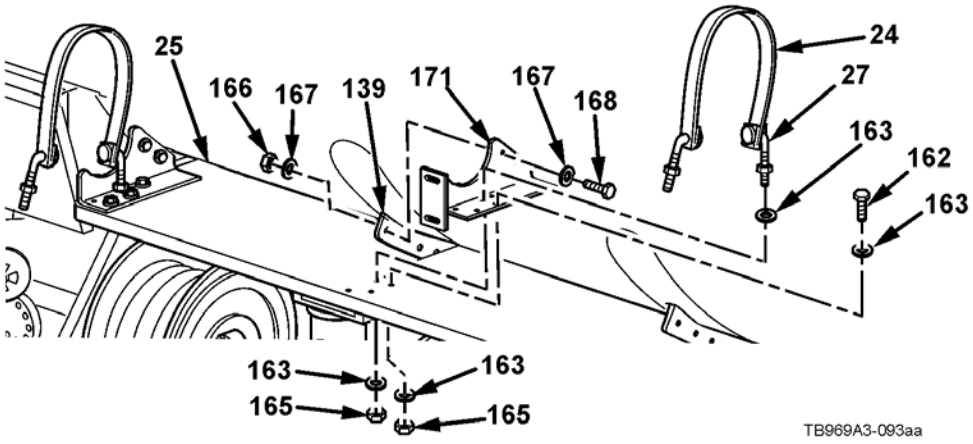


REMOVAL/REPLACEMENT (continued)

17. Remove capscrew (162), self-locking nut (165), two flat washers (163), and retaining strap (24) from center tube canister bracket (171) and hose reel housing (25). Discard nuts.

18. Remove three capscrews (168), three self-locking nuts (166), six flat washers (167), and center tube canister bracket (171) from crossmember (139). Discard nuts.

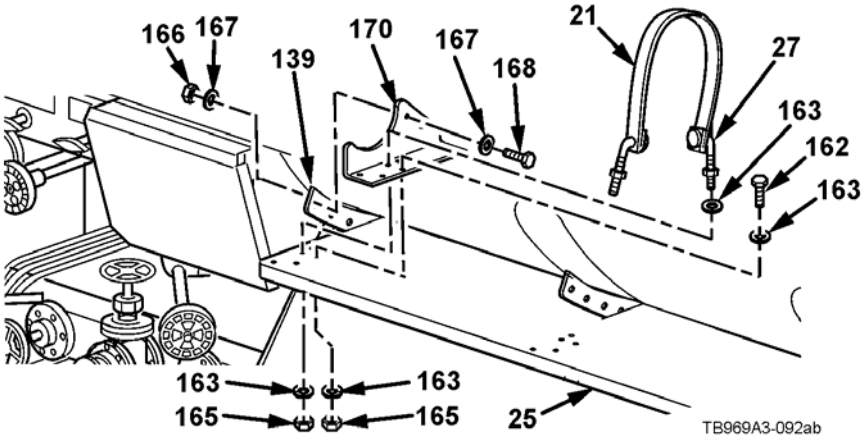
19. Remove three capscrews (162), three self-locking nuts (165), six flat washers (163), and center tube canister bracket (171) from hose reel housing (25). Discard nuts.



20. Remove capscrew (162), self-locking nut (165), two flat washers (163), and retaining strap (21) from front tube canister bracket (170) and hose reel housing (25). Discard nuts.

21. Remove three capscrews (168), three self-locking nuts (166), six flat washers (167), and front tube canister bracket (170) from crossmember (139). Discard nuts.

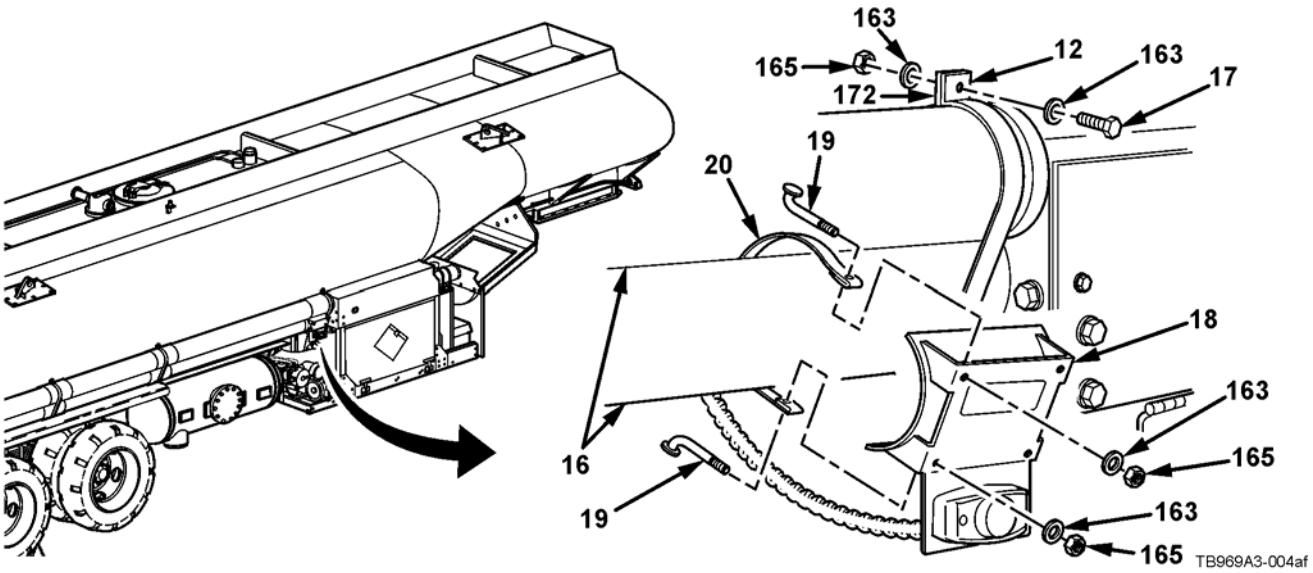
22. Remove three capscrews (162), three self-locking nuts (165), six flat washers (163), and front tube canister bracket (170) from hose reel housing (25). Discard nuts.



REMOVAL/REPLACEMENT (continued)

23. Remove capscrew (20), self-locking nut (165), two flat washers (163), and retaining strap (12) from tube canister brackets (172). Discard nuts.

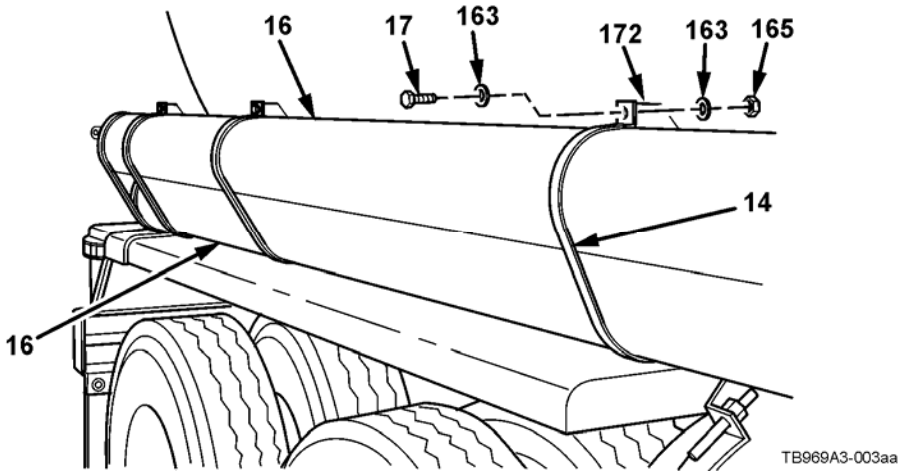
24. Remove four self-locking nuts (165), four flat washers (163), four J-bolts (19), two retaining straps (20), and side marker light box (18) from two hose tubes (16). Discard nuts.



NOTE

An assistant will help with Step 35.

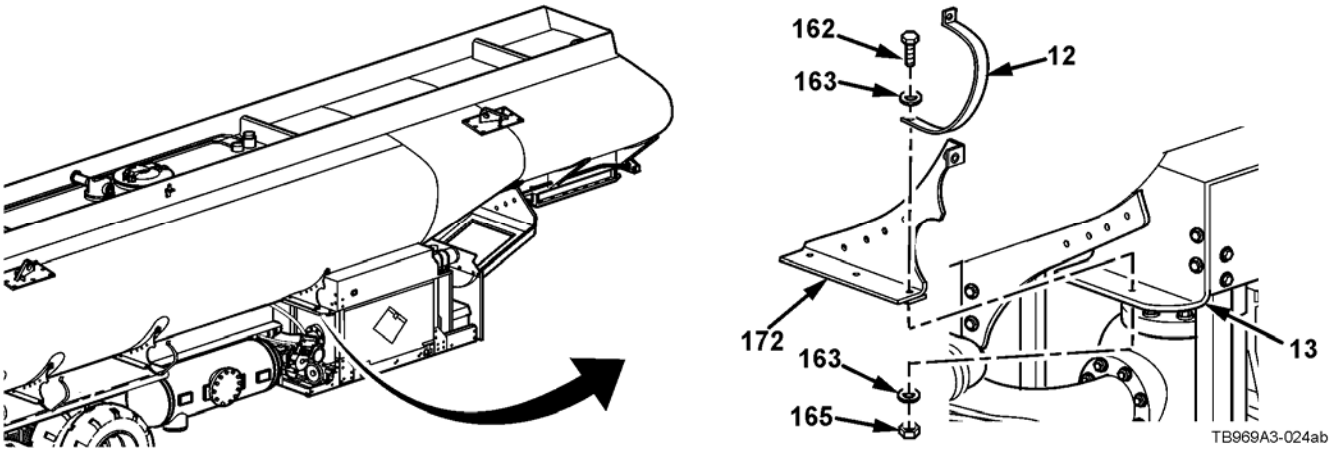
25. Remove three capscrews (165), three self-locking nuts (165), six flat washers (163), three retaining straps (14), and two hose tubes (16) from three tube canister brackets (172).



REMOVAL/REPLACEMENT (continued)

26. Remove capscrew (162), self-locking nut (165), two flat washers (163), and retaining strap (12) from tube canister bracket (172) and engine compartment (13). Discard nut.

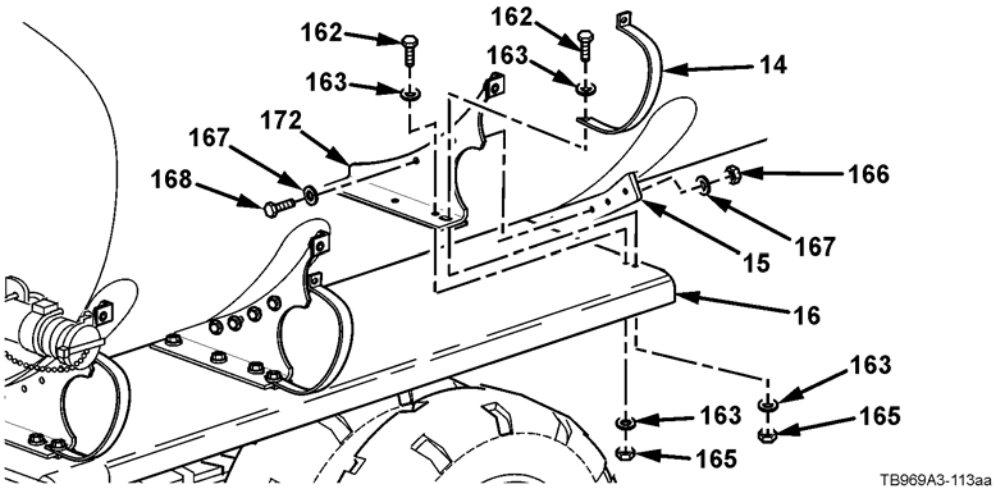
27. Remove remaining two capscrews (162), two self-locking nuts (165), four flat washers (163), and tube canister bracket (172) from engine compartment (13). Discard nuts.



28. Remove two capscrews (162), two self-locking nuts (165), four flat washers (163), and two retaining straps (14) from two tube canister brackets (172) and fender (15). Discard nuts.

29. Remove eight capscrews (168), eight self-locking nuts (166), sixteen flat washers (167), and two tube canister brackets (172) from crossmembers (34). Discard nuts.

30. Remove six capscrews (162), six self-locking nuts (165), twelve flat washers (163), and two tube canister brackets (172) from fender (15). Discard nuts.



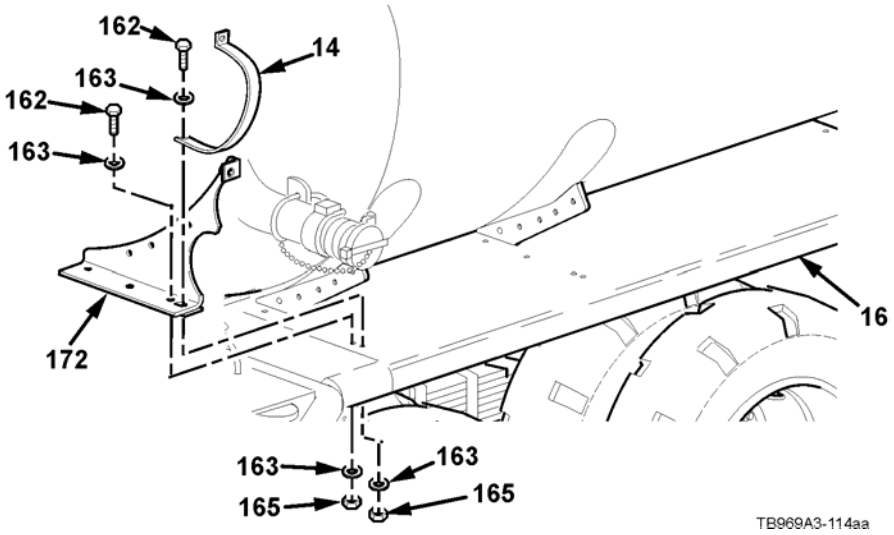
REMOVAL/REPLACEMENT (continued)

NOTE

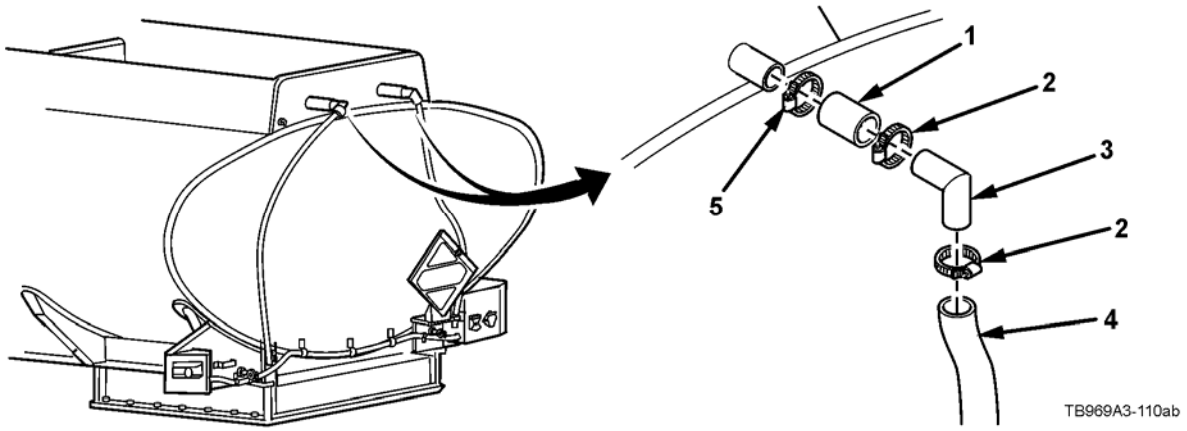
The rear fender tube canister bracket does not mount to a crossmember.

31. Remove capscrew (162), self-locking nut (165), two flat washers (163), and retaining strap (14) from rear tube canister bracket (172) and fender (15). Discard nut.

32. Remove two capscrews (162), two self-locking nuts (165), four flat washers (163), and rear tube canister bracket (172) from fender (15). Discard nut.

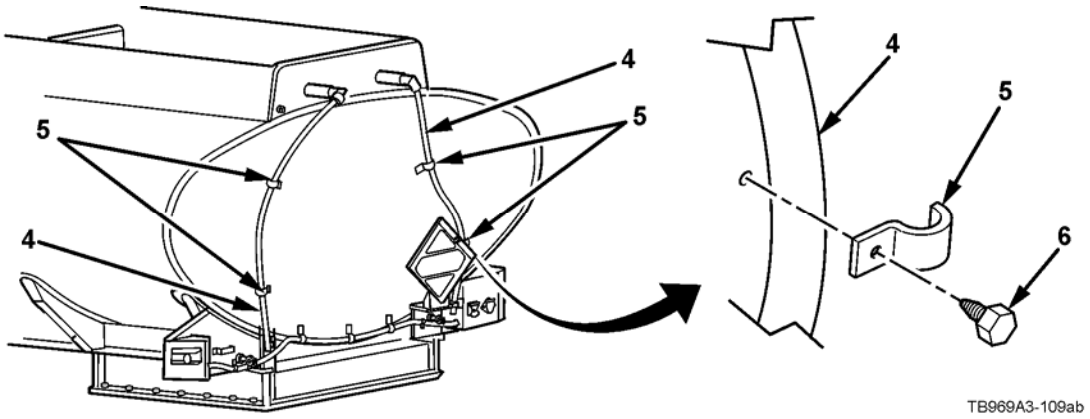


33. Remove six tube clamps (5), two drain hose nipples (3), two hoses (1), and two drain hoses (4) from semitrailer.



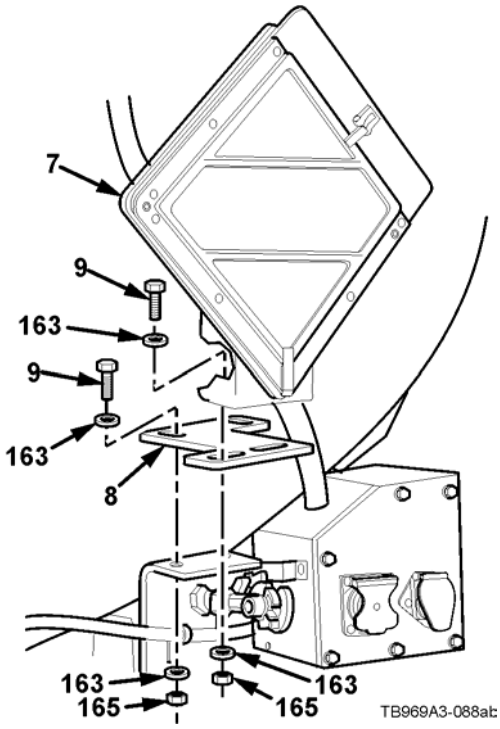
REMOVAL/REPLACEMENT (continued)

34. Remove four thread forming screws (6), four universal conduit clips (5), and two drain hoses (4) from semitrailer.



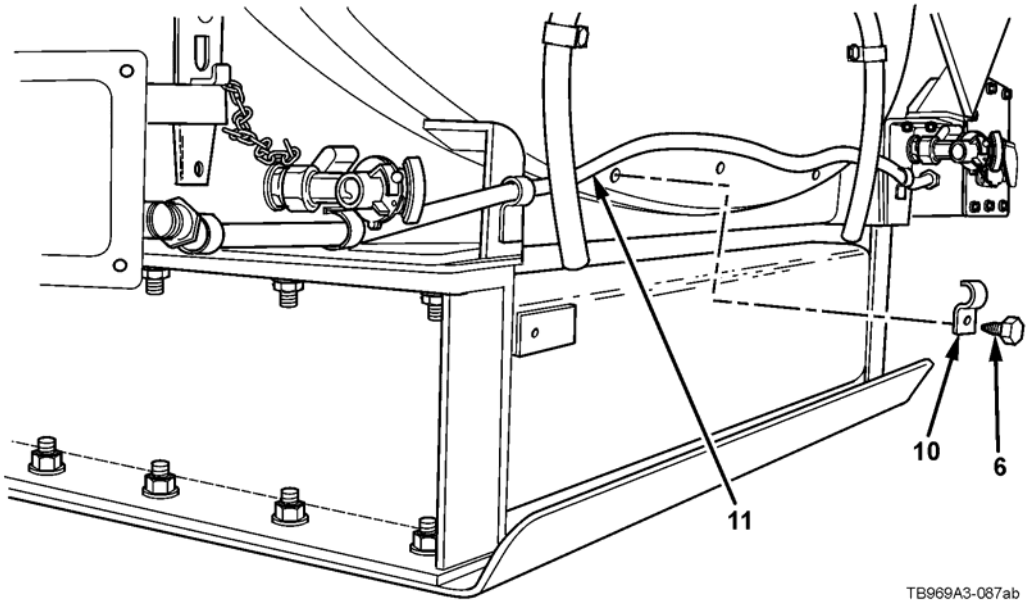
35. Remove two capscrews (9), two self-locking nuts (165), four flat washers (163), and hazardous materials placard bracket (7) from front placard support (8). Discard nuts.

36. Remove two capscrews (9), two self-locking nuts (165), four flat washers (163), and front placard support (8) from front of semitrailer. Discard nuts.



REMOVAL/REPLACEMENT (continued)

37. Remove three thread forming screws (6) and three universal conduit clips (10) from electrical conduit (11).



CHAPTER 4
ADD-ON-ARMOR (AOA) KIT

SCOPE

This chapter provides the installation and removal instructions for the AOA Kit 57K4844 installed on M969A3 series fuel tankers.

TOOLS AND SPECIAL TOOLS

For a list of tools and special tools needed to install the AOA kit, refer to Chapter 7, Table 7-2.

ARMY KNOWLEDGE ONLINE (AKO) WEBSITE

Refer to the AKO website at https://www.us.army.mil/suite/login/welcome.html for the most recent updates to the kits and TB installation instructions.

KIT PARTS AND THEIR DISPOSITION

The following table lists the kit components of the AOA kit. This list can be used to inventory the kit for completeness.

NOTE

The items listed in Table 4-1 are AOA Kit Installed parts only.

Table 4-1. AOA Kit Contents List – 57K4844

Item No.	Nomenclature	National Stock Number	Part Number	CAGEC	QTY
	Assembly Drawing		12500827	31902	1
1	T-Bolt, Belly Panel		12502022	31902	8
2	Nut, Self-Locking, 1/2-13		M45913/4-8C-G8-Z	96906	108
3	Washer, Flat, 1/2	5310-00-797-9425	MS15795-818	96906	216
4	Panel, Belly, Roadside		12501992	31902	1
5	Panel, Belly, Curbside		12501993	31902	1
6	Screw, Cap, Hexagon, Head, 1/2-13X1.25	5305-00-071-2067	B1821BH050C125N	80204	8
7	Washer, Lock, 1/2	5310-00-933-8778	MS35338-143	96906	8
8	Bracket, Front Curbside		12502013-002	31902	1
9	Screw, Cap, Hexagon, Head, 1/2-13X1.75	5305-00-071-2070	B1821BH050C175N	80204	100
12	Center Brace, Bracket A, Curbside		12501975	31902	1
14	Fender, Bracket Curbside		12501988	31902	1
15	Panel B, Front Curbside		12502024	31902	1
16	Nut Jam, Hexagon 5/8-11	5310-00-851-2677	MS35691-49	96906	14
17	Screw, Cap, Hexagon, Head, 5/8-11X5.00		92620A811		2

KIT PARTS AND THEIR DISPOSITION (continued)

Table 4-1. AOA Kit Contents List – 57K4844 (continued)

Item No.	Nomenclature	National Stock Number	Part Number	CAGEC	QTY
18	Panel A, Front Curbside		12501981	31902	1
19	Panel D, Front Curbside		12501987	31902	1
20	Screw, Cap, Hexagon, Head, 1/2-13X2.00	5305-00-071-2071	B1821BH050C200N	80204	2
21	Panel C, Front Curbside		12501974	31902	1
22	Panel E, Filter Curbside		12501977	31902	1
23	Panel, Fender, Front Curbside		12501978	31902	1
24	Panel, Fender, Center Curbside		12502019	31902	1
25	Panel, Fender, Center Curbside		12501980	31902	1
26	Panel, Fender, Rear Curbside		12501973	31902	1
27	Screw, Cap, Hexagon, Head, 3/8-16X1.25	5305-00-068-0511	B1821BH038C125N	80204	64
28	Bracket, Panel Rear Fender, Curbside		12502025	31902	1
29	Nut, Self-Locking, 3/8-16		M45913/4-6C-G8-Z	96906	82
30	Washer, Flat, 3/8	5310-00-773-7618	MS15795-814	96906	160
31	Center Brace, Bracket B, Curbside		12501976	31902	1
33	Door A Assembly, Curbside		12501963	31902	1
34	Latch, Safety Right		12500887-002	31902	4
35	Screw, Cap, Hexagon, Head, 3/8-16X1.50	5305-00-725-6317	B1821BH038C150N	80204	14
36	Door B Assembly, Curbside		12501962	31902	1
37	Door C Assembly, Curbside		12501961	31902	2
38	Support Plate, Roadside		12501969	31902	1
41	Shim, Forward Rib Roadside		12502032	31902	3
42	Door Frame, Left, Front Roadside		12500896	31902	1
43	Screw, Cap, Hexagon, Head, 5/8-11X3.00		92620A806		4
44	Door Frame, Right, Front Roadside		12500895	31902	1
45	Panel F, Front Roadside		12501997	31902	1
46	Screw, Cap, Hexagon, Head, 5/8-11X4.00		92620A809		8
49	Panel G, Front Roadside		12501998	31902	1
50	Spacer, Plate Adjustment		12502016	31902	2
51	Panel, Fender, Front, Roadside		12501966	31902	1
53	Panel, Fender, Center, Roadside		12501971	31902	1
56	Panel, Fender, Rear, Roadside		12501972	31902	1
57	Latch, Safety Left		12500887-001	31902	3

KIT PARTS AND THEIR DISPOSITION (continued)

Table 4-1. AOA Kit Contents List – 57K4844 (continued)

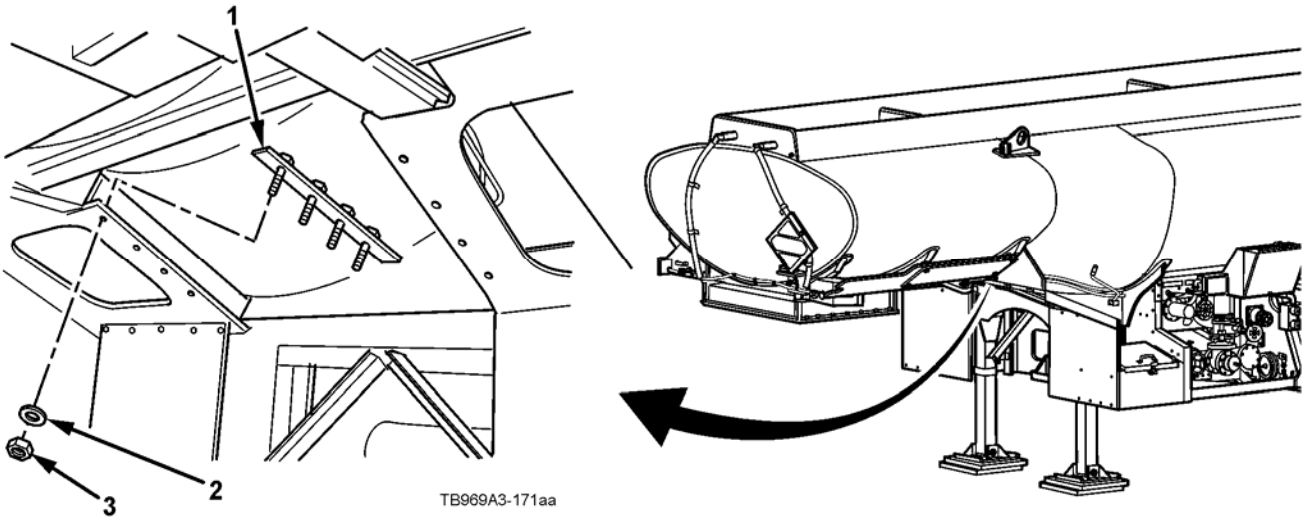
Item No.	Nomenclature	National Stock Number	Part Number	CAGEC	QTY
58	Door, Left Assembly Roadside		12500893	31902	1
59	Door, Right Assembly Roadside		12500894	31902	1
60	Door F, Assembly, Roadside		12501979	31902	2
61	Door Assembly Brake Access, Roadside		12501964	31902	1
62	Screw, Cap, Hexagon, Head, 1/4-20X0.75	5305-00-008-0508	B1821BH025C075N	80204	2
64	Nut, Self-Locking, 3/8-16		M45913/4-4C-G8-Z	96906	2
65	Washer, Flat, 1/4	5310-01-304-8733	MS15795-852	96906	4

VEHICLE PREPARATION

NOTE

Check assembly areas for any items that could interfere with the installation of the AOA kits. Should any items be in the way, use a Hand Grinder to remove those items. Finish all exposed metal areas using a rust inhibitor primer and paint as specified in Table 7-4, Materials and Parts. Allow for the appropriate time for prime and paint to cure.

1. Remove eight nuts (13), eight flat washers (12), and two bolt strips (1) from semitrailer. Discard bolt strips and hardware.

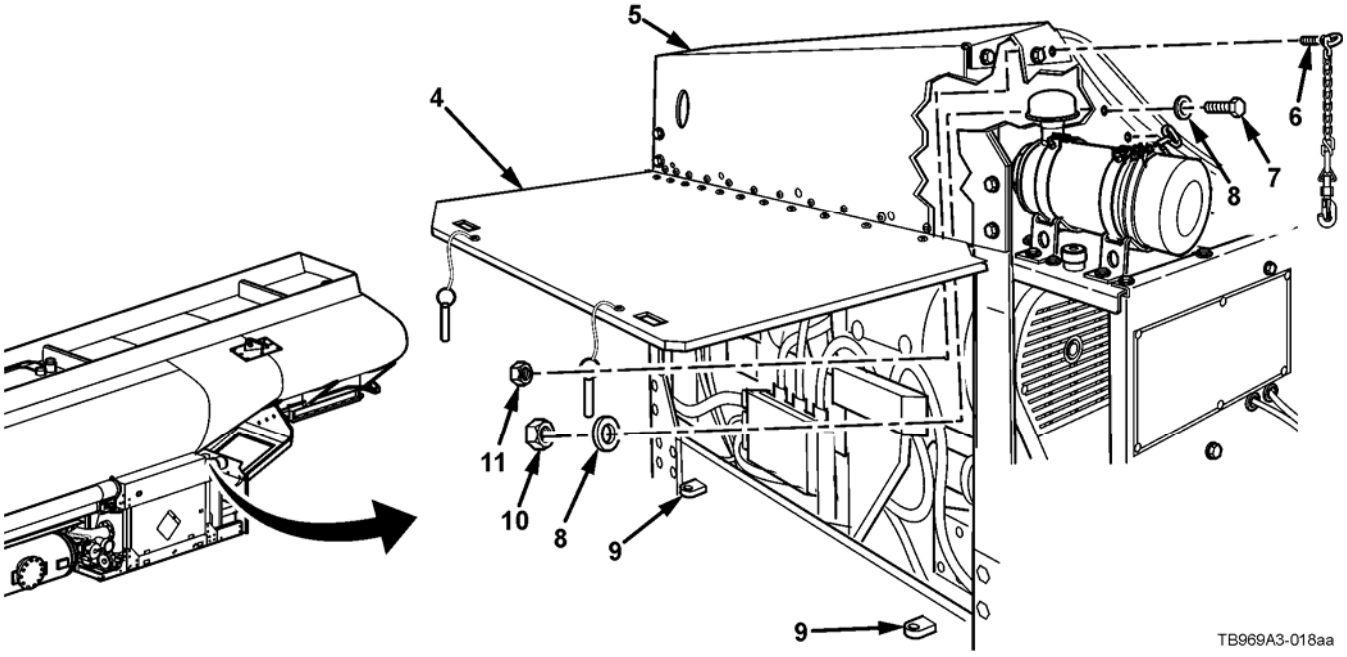


VEHICLE PREPARATION (continued)

WARNING

- **Remove wheel with semitrailer connected to prime mover if possible. If semitrailer is not connected to prime mover, ensure that landing gear is lowered and locked and wheels are chocked. Failure to follow this warning may cause semitrailer to roll resulting in injury to personnel or damage equipment.**
- **Wheel assembly is heavy. Use two people to remove wheel assembly from studs. Failure to follow this warning could result in injury to personnel.**
- **Engine compartment door must be secured in the open position prior to removing from the engine compartment shroud. Failure to do so may cause injury to personnel.**

2. Remove curbside front-rear wheels, refer to TM 9-2330-330-14&P. Ensure that the axle is supported by a jackstand.
3. Open engine compartment door.
4. Remove two self-locking nuts (10), two capscrews (7), and four flat washers (8) from engine compartment shroud (5). Discard hardware.
5. Remove rivets, as necessary, and engine compartment door (4) from engine compartment shroud (5). Discard engine compartment door and hardware.
6. Grind two latches (9) from engine compartment shroud (5).
7. Remove nut (11) and eye bolt with chain (6) from engine compartment shroud (5). Discard eye bolt with chain and hardware.



VEHICLE PREPARATION (continued)

WARNING

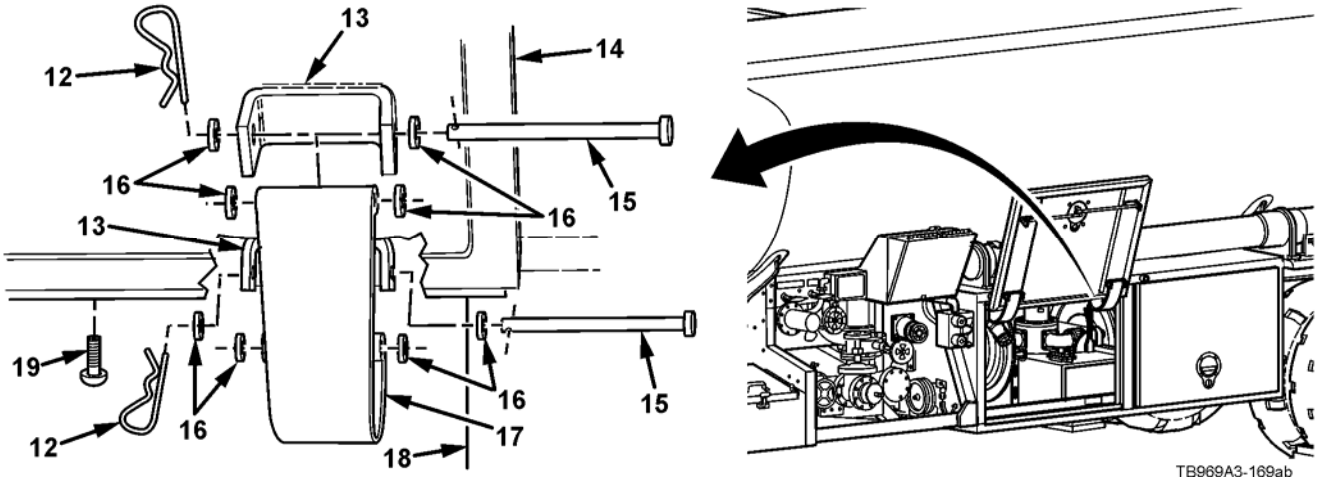
Cabinet door must be secured in the open position prior to the removal of hinges. Failure to do so may cause injury to personnel.

NOTE

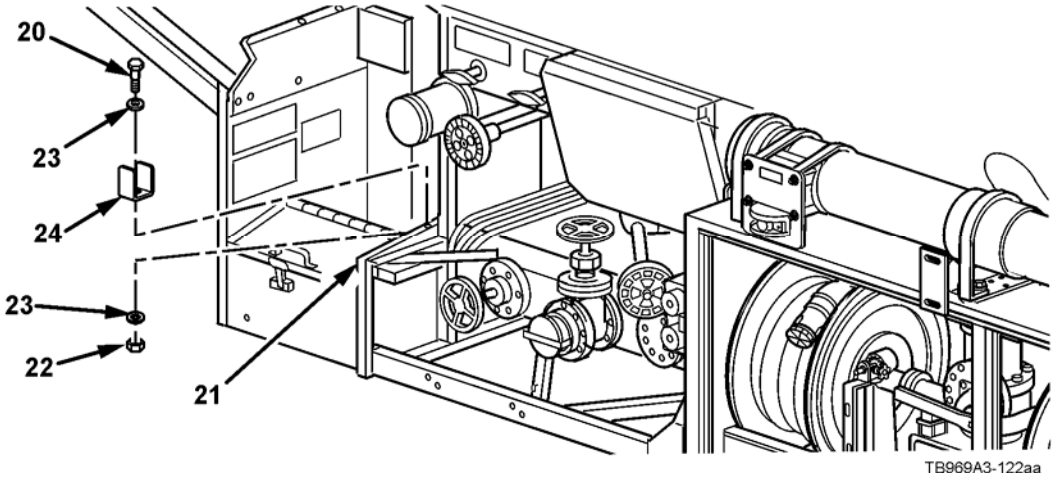
There are two hose reel cabinet doors and two cabinets on the M969A3. Steps 8 and 9 remove the hose reel cabinet door from one cabinet.

8. Remove two cotter pins (12), two straight pins (15), eight flat washers (16), and two hinges (17) from four door hinge brackets (13). Discard cotter pins, straight pins, flat washers, and hinges.

9. Remove rivets (19), as necessary, and hose reel cabinet door (14) from hose reel cabinet (18). Discard rivets and hose reel cabinet door.



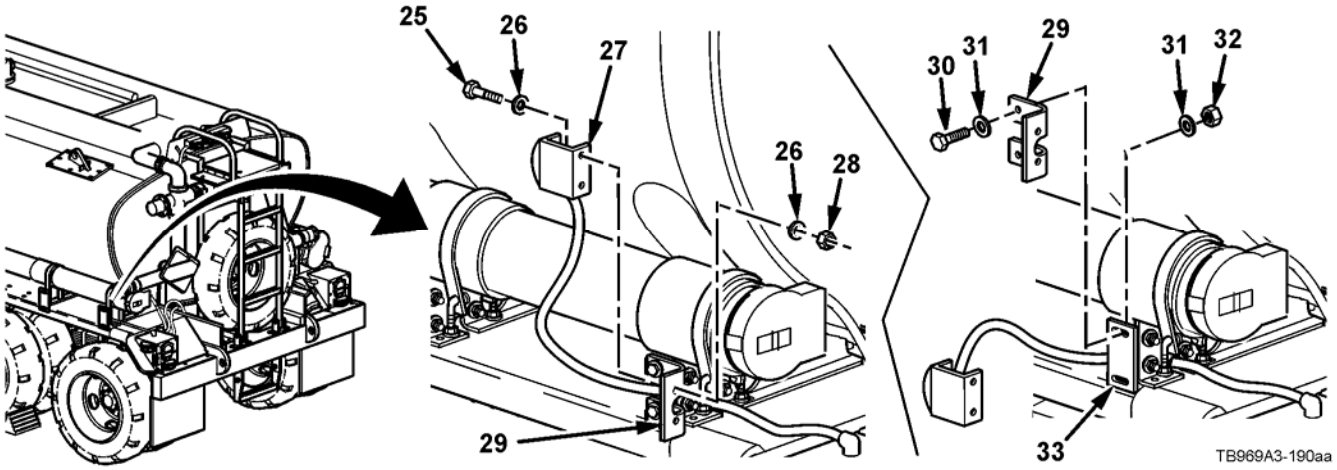
10. Remove nut (22), capscrew (20), two flat washers (23), and landing leg handle bracket (24) from pipe frame assembly (21). Retain landing leg handle bracket for reinstallation. Discard hardware.



VEHICLE PREPARATION (continued)

11. Remove two capscrews (25), two self-locking nuts (28), four flat washers (26), and ABS marker light (27) from rear light bracket (29). Discard hardware.

12. Remove two capscrews (30), two self-locking nuts (32), four flat washers (31), and rear light bracket (29) from tube canister bracket (33). Discard rear light bracket and hardware.



INITIAL INSTALLATION

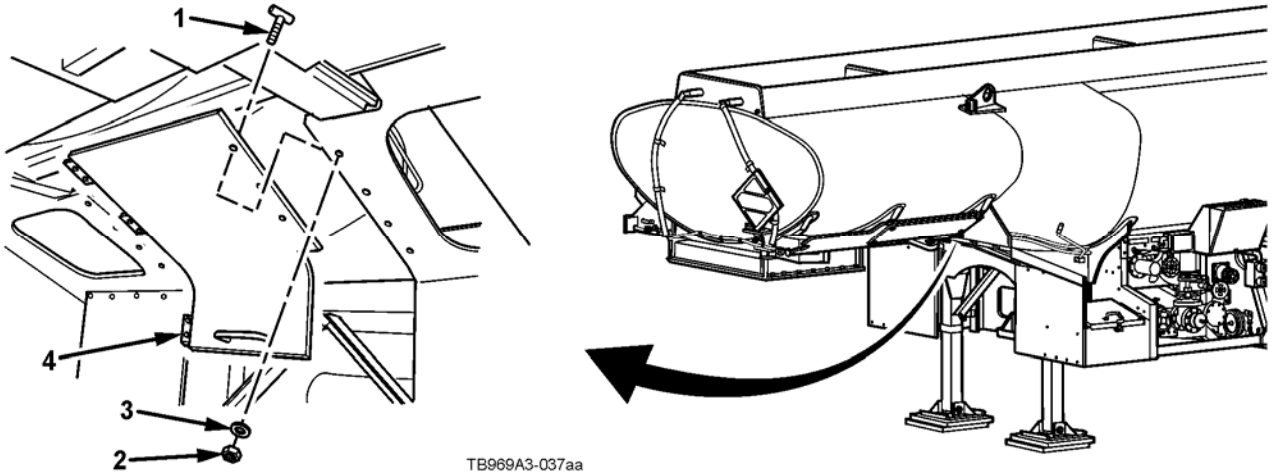
WARNING

The armor plates of the Add-On-Armor (AOA) kit are heavy and awkward. Two personnel are required at all times when installing the armor plates on the semitrailer. Failure to do so may result in injury to personnel or damage to equipment.

NOTE

Refer to Table 4-1, AOA Kit Contents List, for a list of all AOA kit components.

1. Install belly panel (4) on semitrailer with four T-bolts (1), four flat washers (3), and four self-locking nuts (2). Do not fully tighten hardware.

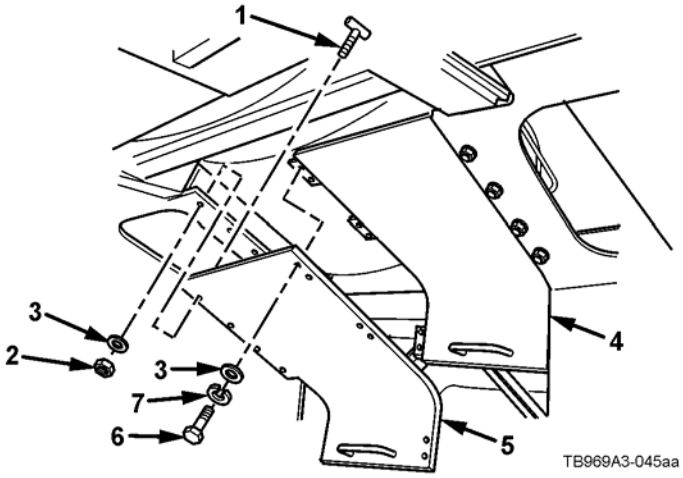


INITIAL INSTALLATION (continued)

2. Install belly panel (5) on semitrailer with four T-bolts (1), four flat washers (3), and four self-locking nuts (2). Do not fully tighten hardware.

3. Install belly panel (5) on belly panel (4) with six capscrews (6), six lockwashers (7), and six flat washers (3). Do not fully tighten hardware.

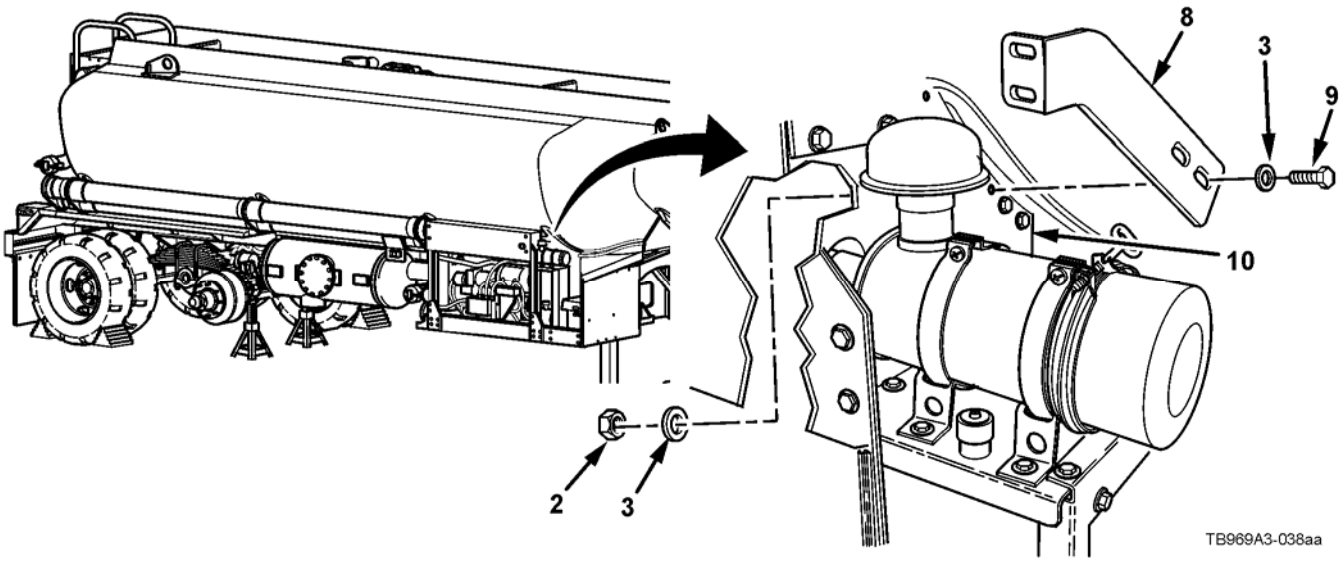
4. Tighten belly panel (4) and belly panel (5) hardware. Torque capscrews and self-locking nuts to 55-65 lb-ft (75-88 N•m).



NOTE

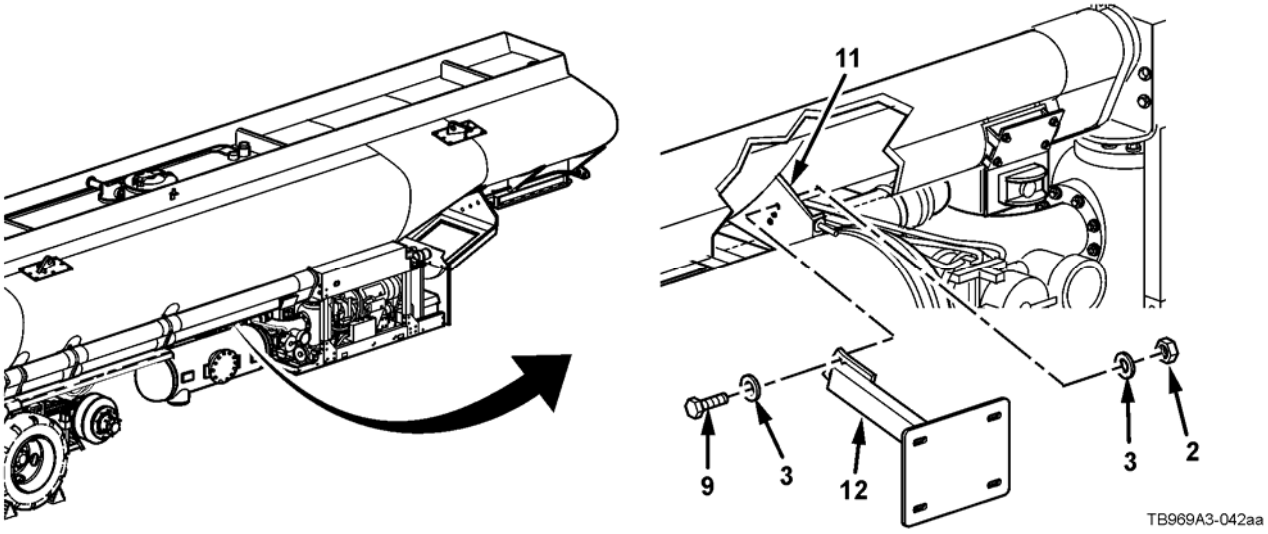
A hydraulic jack may be needed to raise the engine compartment shroud for hole alignment.

5. Install front bracket (8) on engine compartment shroud (10) with four flat washers (3), two capscrews (9), and two self-locking nuts (2). Do not fully tighten hardware.

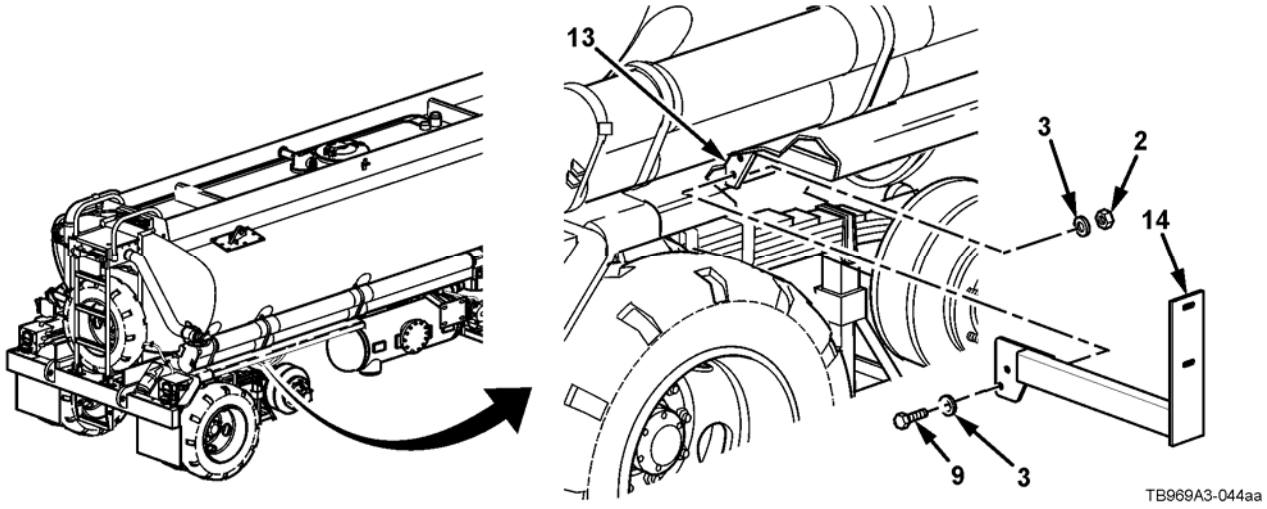


INITIAL INSTALLATION (continued)

6. Install rib bracket A center brace (12) on crossmember (11) with six flat washers (3), three capscrews (9), and three self-locking nuts (2). Do not fully tighten hardware.



7. Install fender bracket (14) on crossmember with four flat washers (13), two capscrews (9), and two self-locking nuts (2). Do not fully tighten hardware.

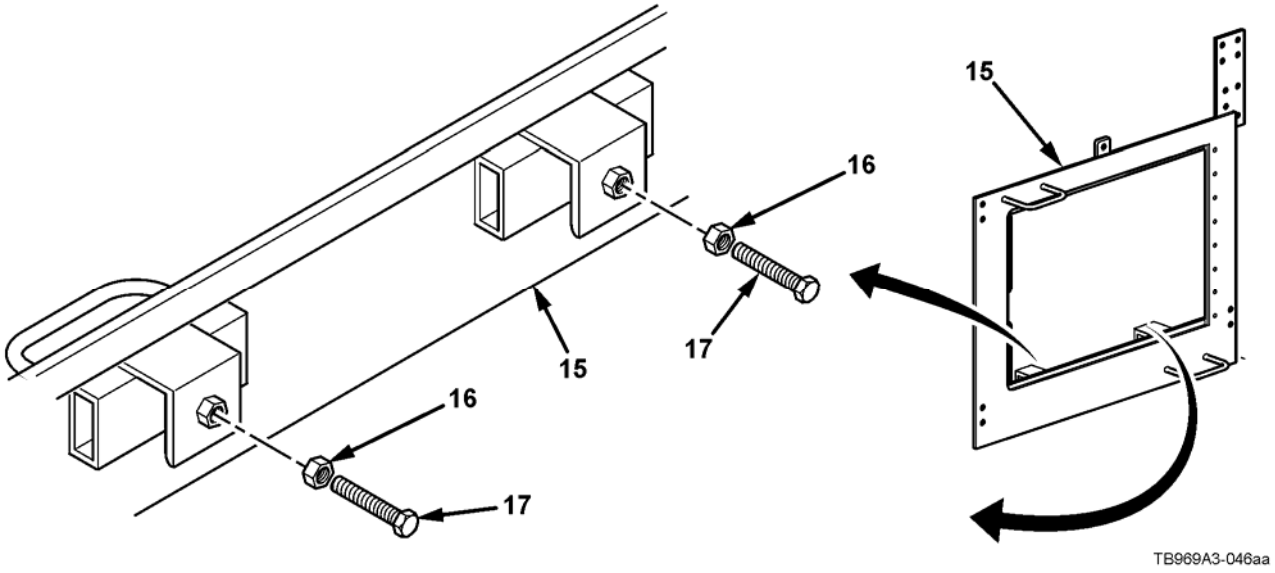


INITIAL INSTALLATION (continued)

NOTE

Do not fully tighten capscrews or clamping screws until armor is properly positioned and aligned on engine compartment shroud.

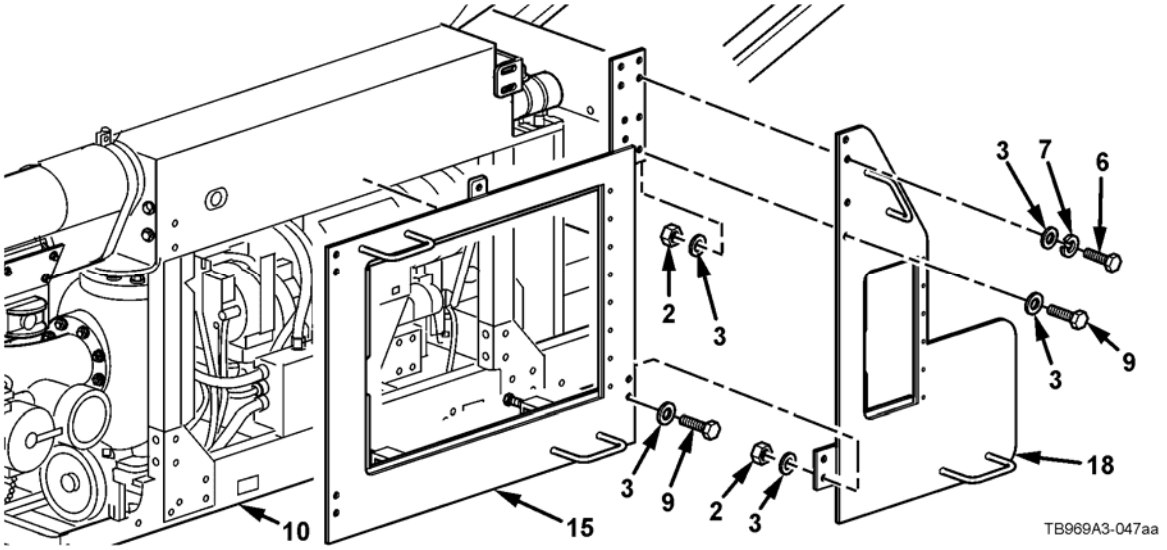
8. Install two capscrews (17) and two jam nuts (16) on front panel B (15). Do not fully tighten hardware.



9. Position front panel B (15) on engine compartment shroud (10). Do not fully tighten hardware.

10. Position front panel A (18) on front panel B (15). Adjust front panel A (18) to align with holes in front panel B (15) and install with two capscrews (6), two lockwashers (7) and two flat washers (3). Do not fully tighten hardware.

11. Install eight flat washers (3), four capscrews (9), and four self-locking nuts (2) on front panel A (18) and front panel B (15). Do not fully tighten hardware.

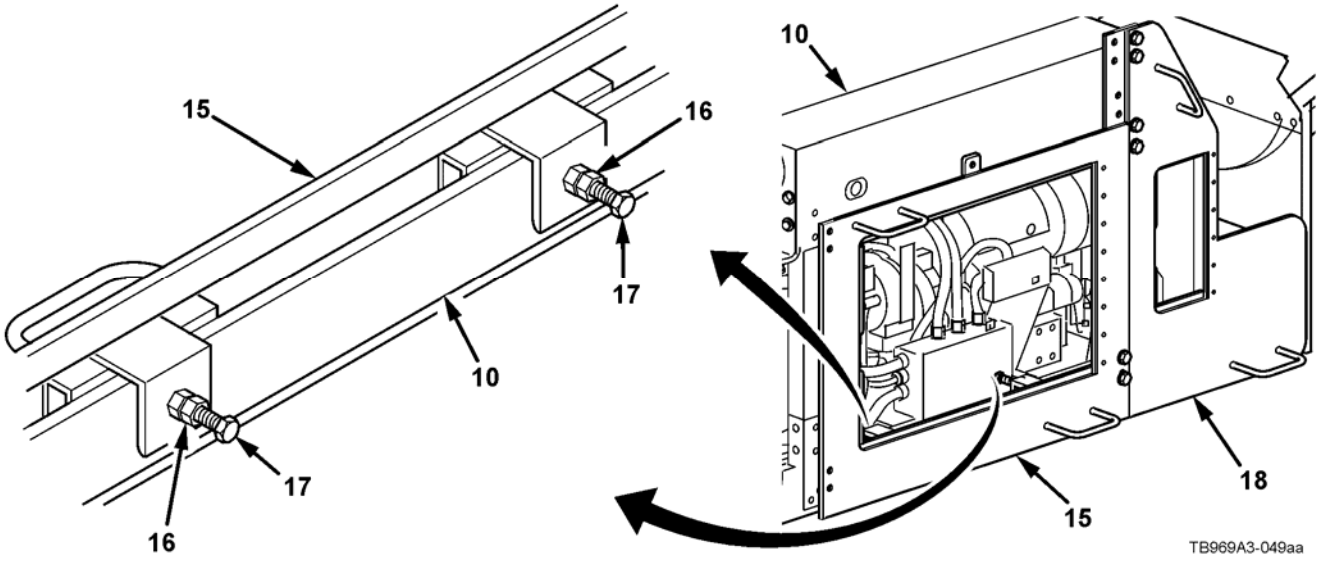


INITIAL INSTALLATION (continued)

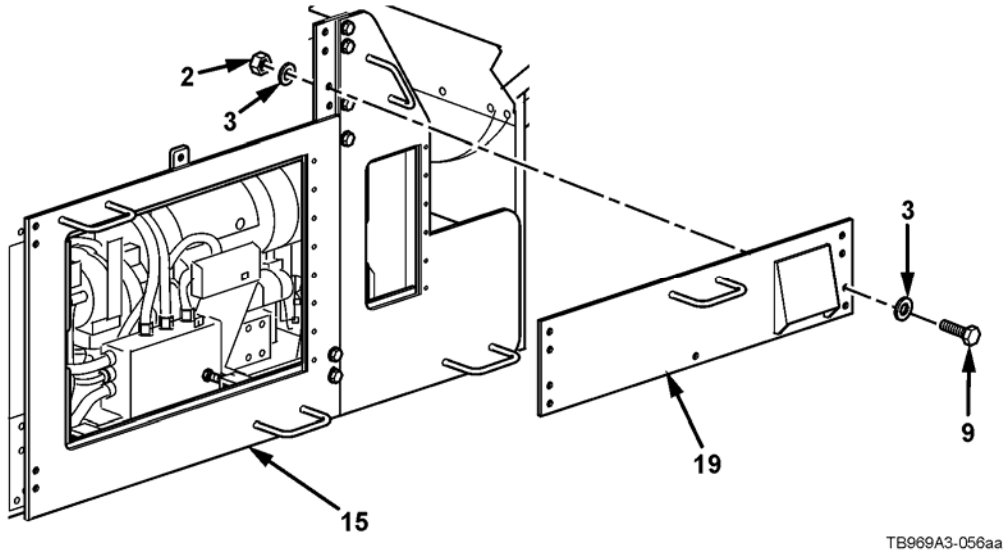
NOTE

Ensure front panel B and front panel A are aligned flush and even with the engine compartment shroud before tightening clamp screws.

12. Align front panel B (15) and front panel A (18) flush with bottom of engine compartment shroud (10). Tighten two capscrews (17) and two jam nuts (16) to secure front panel B (15) on engine compartment shroud (10).

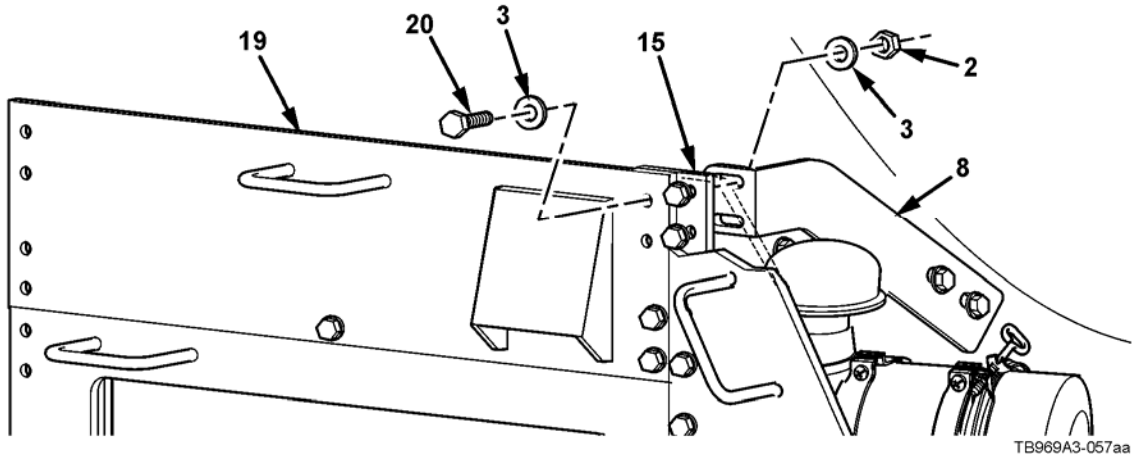


13. Position front panel D (19) on front panel B (15). Align holes of front panel D (19) holes in front panel B (15) and install with four flat washers (3), two capscrews (9), and two self-locking nuts (2). Do not fully tighten hardware.



INITIAL INSTALLATION (continued)

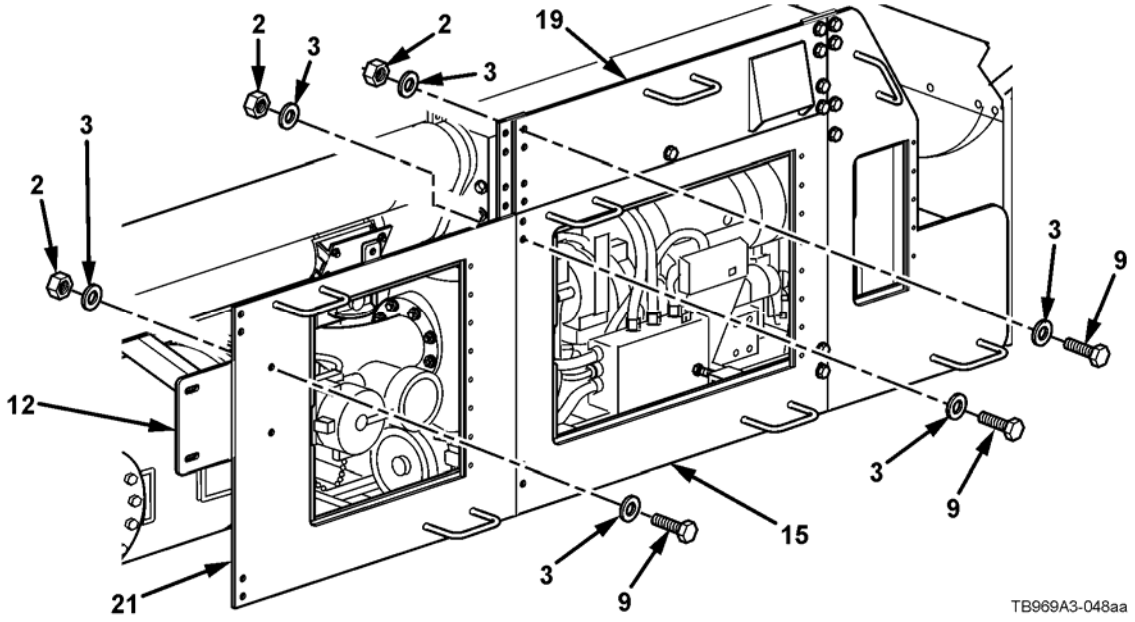
14. Extend front bracket (8) to meet front panel D (19) and front panel B (15) and install with four flat washers (3), two capscrews (20), and two self-locking nuts (2). Do not fully tighten hardware.



15. Position front panel C (21) on front panel B (15), front panel D (19), and rib bracket A center brace (12). Align holes of front panel C (21) with holes in front panel B (15) and install with eight flat washers (3), four capscrews (9), and four self-locking nuts (2). Do not fully tighten hardware.

16. Install front panel C (21) on rib bracket A center brace (12) with four flat washers (3), two capscrews (9), and two self-locking nuts (2). Do not fully tighten hardware.

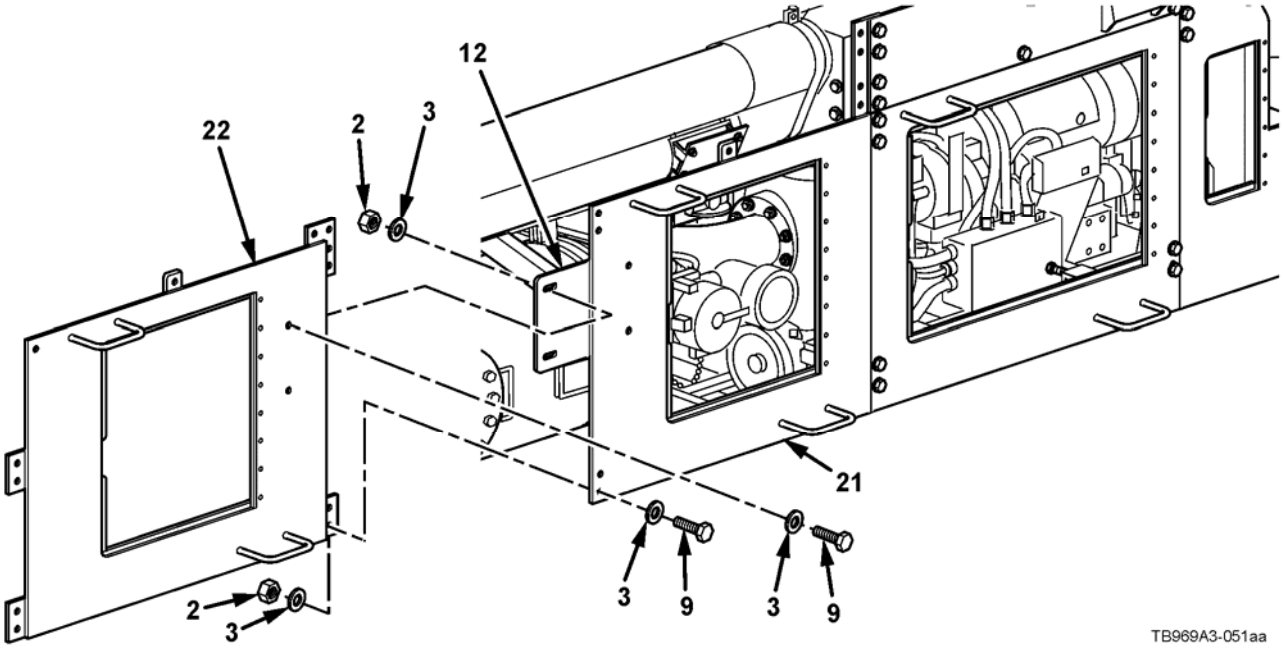
17. Install front panel B (15) on front panel C (21) with eight flat washers (3), four capscrews (9), and four self-locking nuts (2). Do not fully tighten hardware.



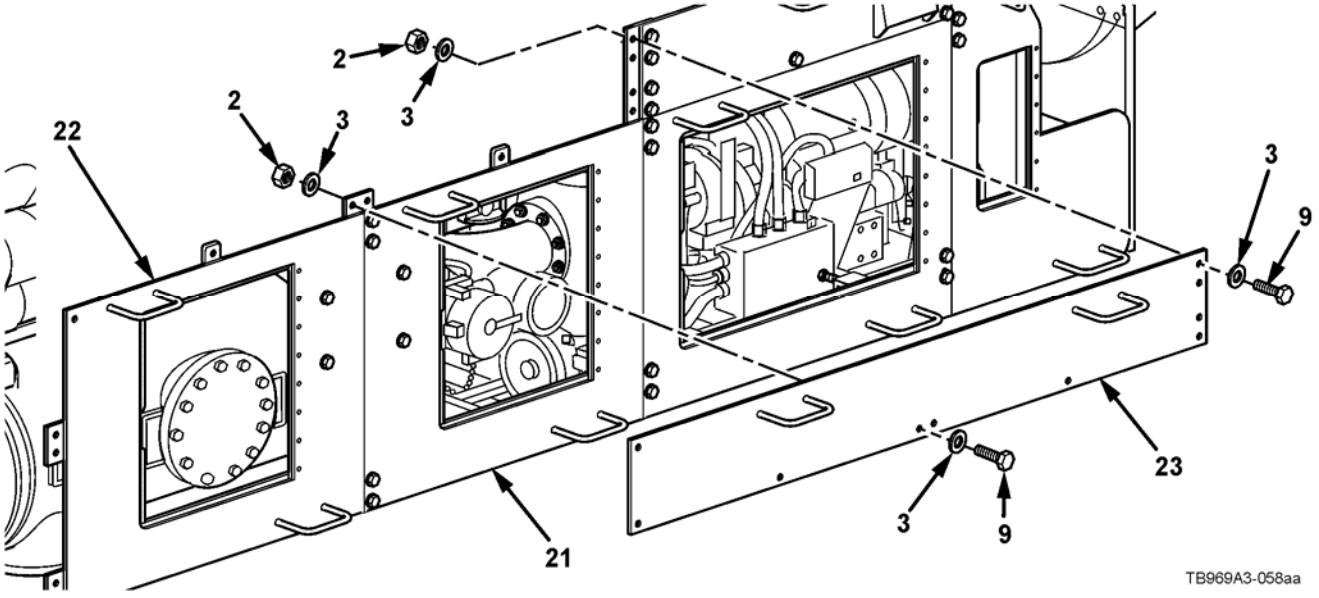
INITIAL INSTALLATION (continued)

18. Position filter panel E (22) on front panel C (21) and rib bracket A center brace (12). Align holes of filter panel E (22) with holes in front panel C (21) and install with eight flat washers (3), four capscrews (9), and four self-locking nuts (2). Do not fully tighten hardware.

19. Align holes of filter panel E (22) with slots of rib bracket A center brace (12) and install with four flat washers (3), two capscrews (9), and two self-locking nuts (2). Do not fully tighten hardware.

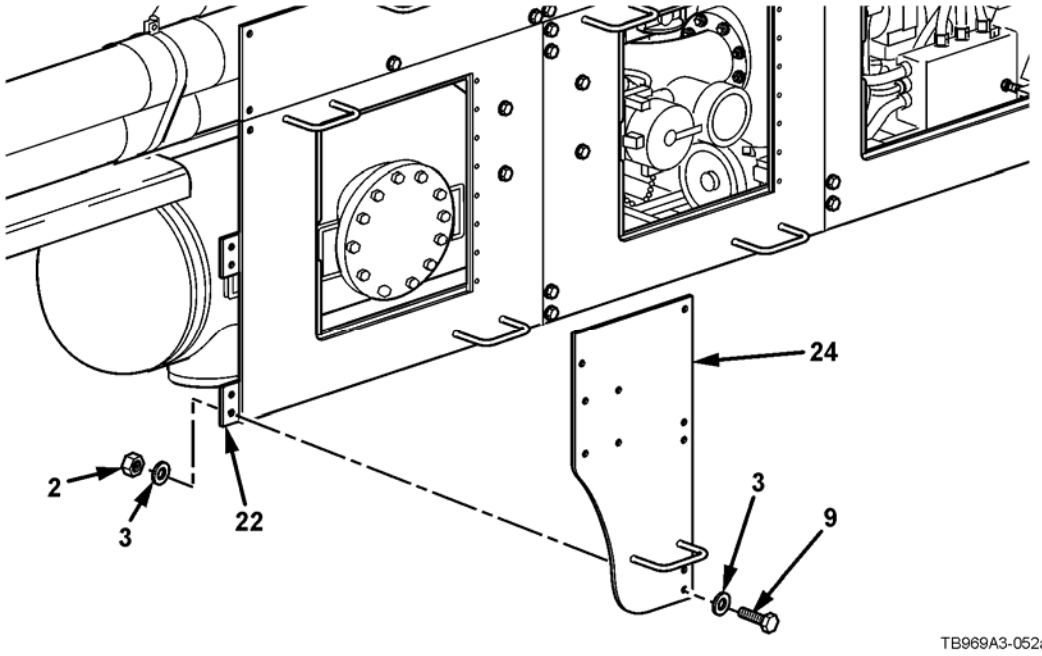


20. Position front fender panel (23) on front panel C (21) and filter panel E (22). Align holes of front fender panel (23) with holes in front panel C (21) and filter panel E (22) and install with sixteen flat washers (3), eight capscrews (9) and eight self-locking nuts (2). Do not fully tighten hardware.

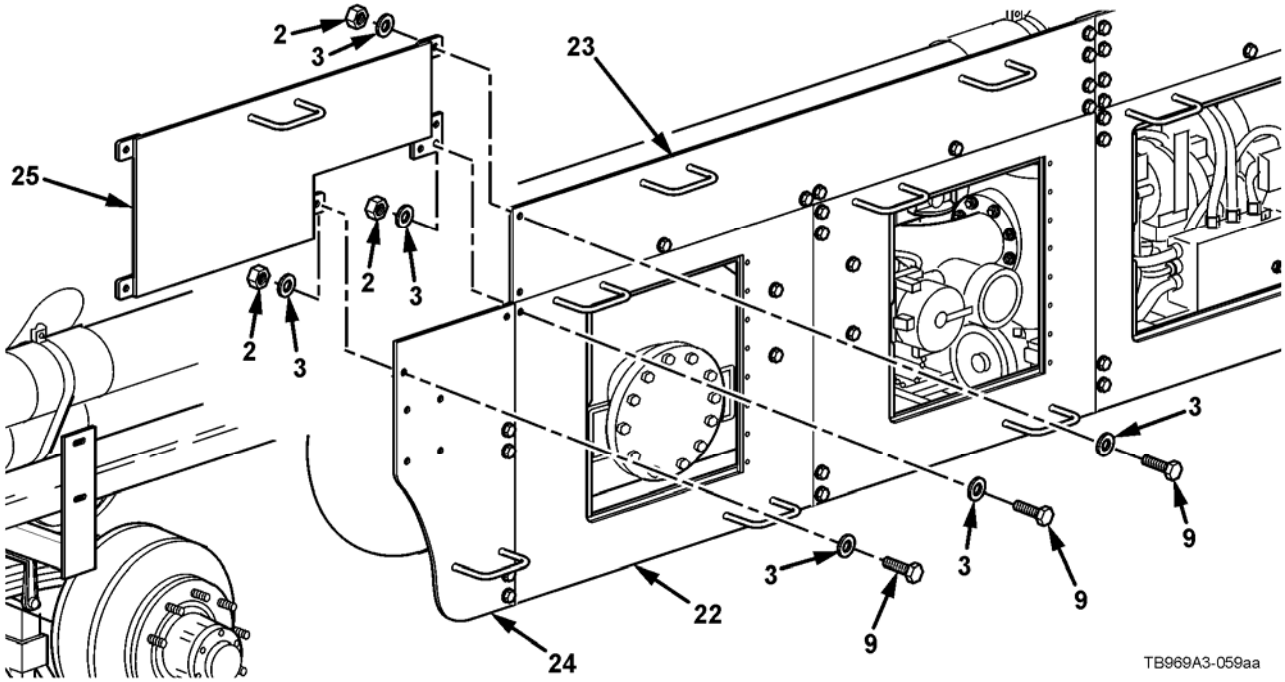


INITIAL INSTALLATION (continued)

21. Position filter center panel (24) on filter panel E (22). Align holes of panel filter center (24) with holes in filter panel E (22) and install with eight flat washers (3), four capscrews (9), and four self-locking nuts (2). Do not fully tighten hardware.



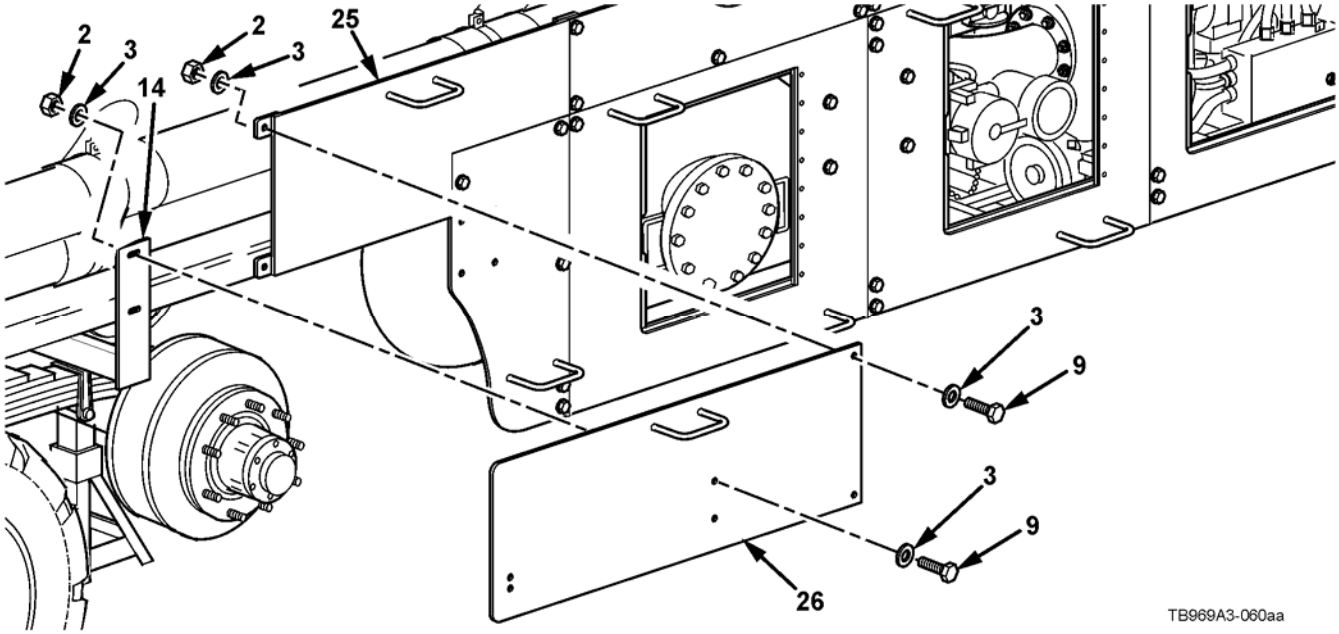
22. Position center fender panel (25) on filter center panel (24) and front fender panel (23). Align holes of center fender panel (25) with holes of filter center panel (24) and front fender panel (23) and install with ten flat washers (3), five capscrews (9), and five self-locking nuts (2). Do not fully tighten hardware.



INITIAL INSTALLATION (continued)

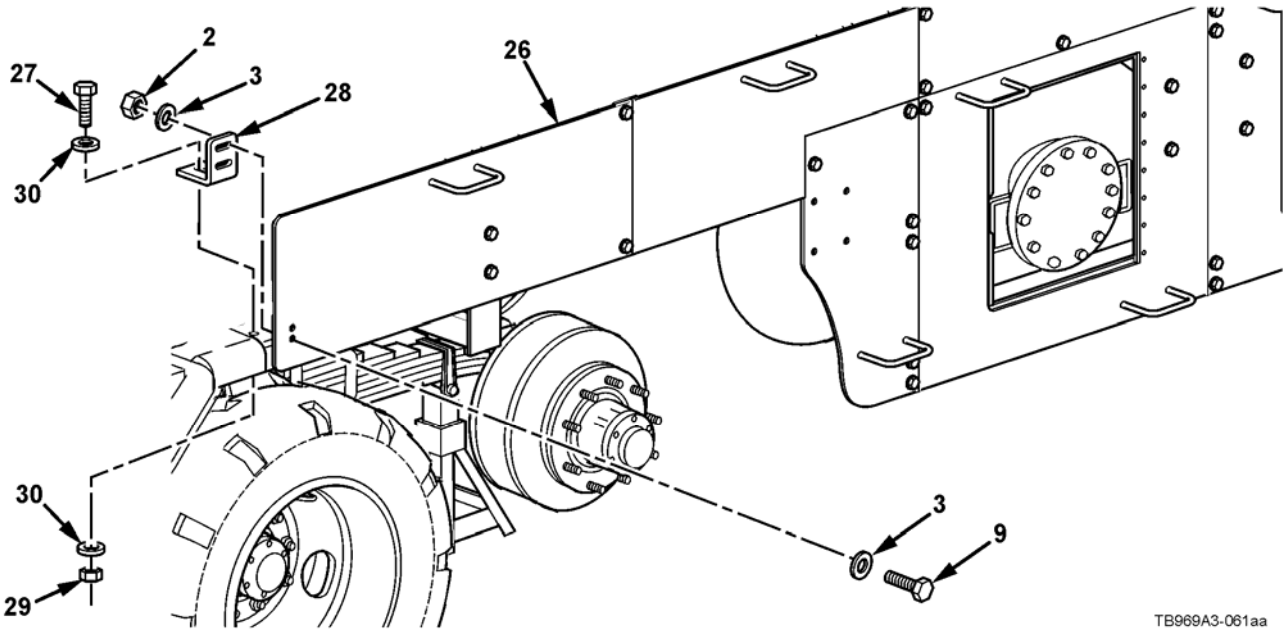
23. Position rear fender panel (26) on center fender panel (25). Align holes of rear fender panel (26) with holes of center fender panel (25) and install with four flat washers (3), two capscrews (9), and two self-locking nuts (2). Do not fully tighten hardware.

24. Install rear fender panel (26) on fender bracket (14) with four flat washers (3), two capscrews (9), and two self-locking nuts (2). Do not fully tighten hardware.



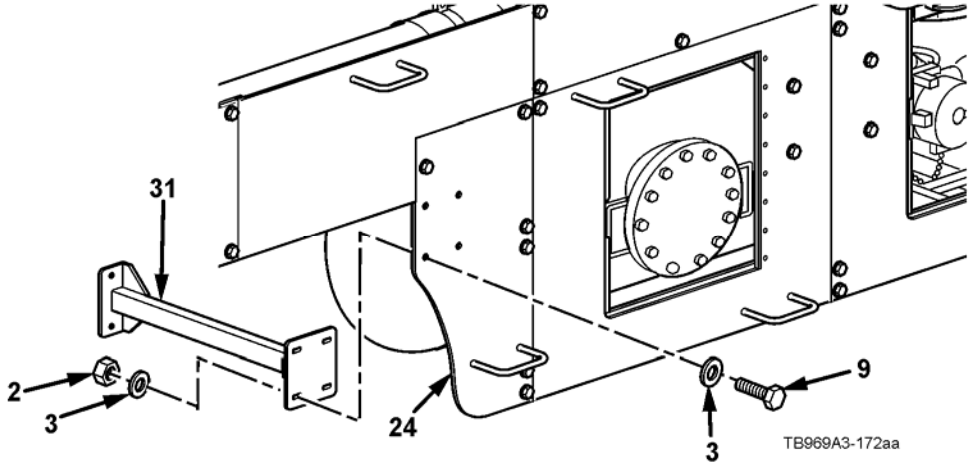
25. Install rear fender panel bracket (28) on rear fender panel (26) with four flat washers (3), two capscrews (9), and two self-locking nuts (2). Do not fully tighten hardware.

26. Install rear fender panel bracket (28) on rear fender with four flat washers (30), two capscrews (27), and two self-locking nuts (29). Do not fully tighten hardware.



INITIAL INSTALLATION (continued)

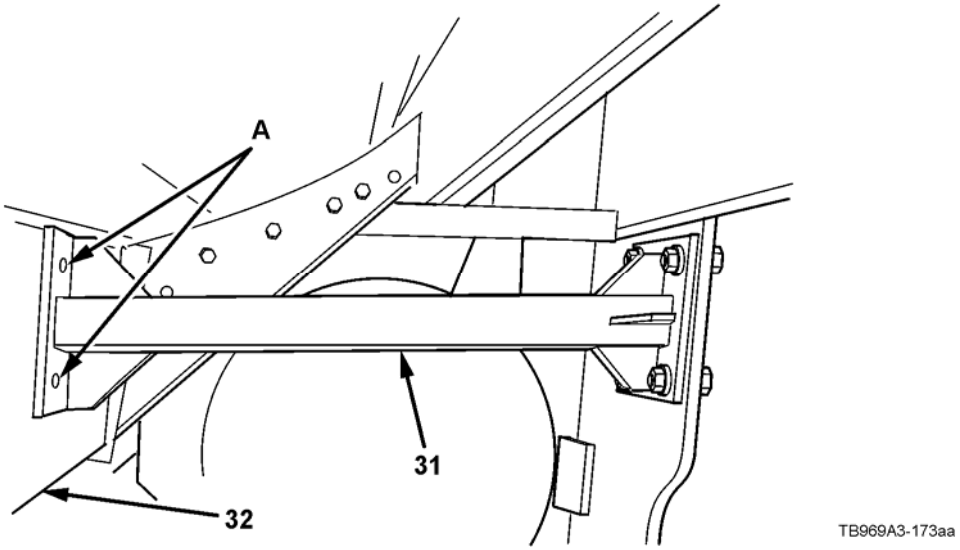
27. Install center bracket B brace (31) on filter center panel (24) with eight flat washers (3), four capscrews (9), and four self-locking nuts (2). Do not fully tighten hardware.



28. Position center bracket B brace (31) on vehicle frame (32). Ensure brace seats flat on frame.

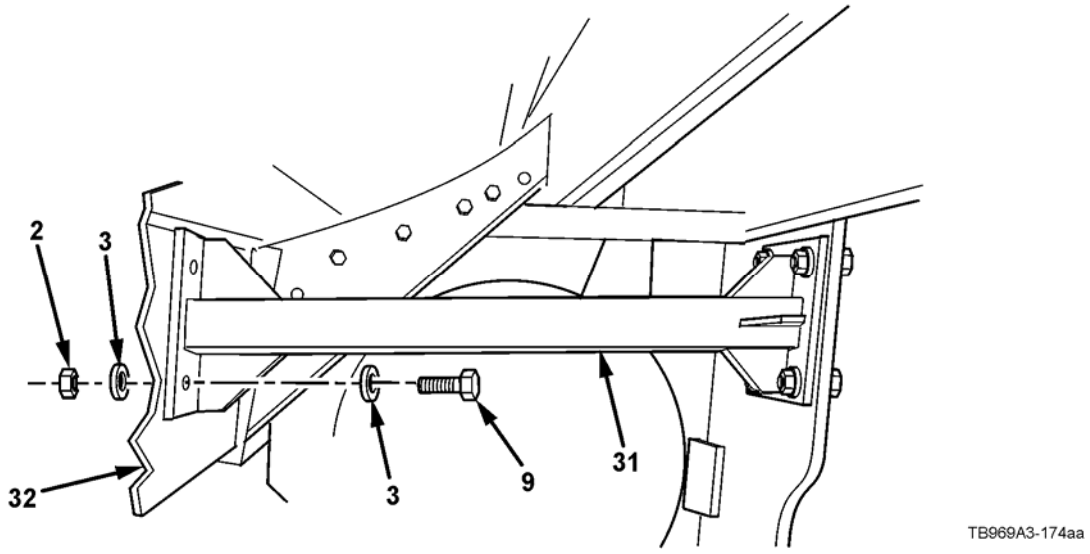
29. Mark hole position A on vehicle frame (32) using center bracket B brace (31) as a template, as shown.

30. Using 19/32 drill bit, drill two holes through vehicle frame (32) in positions marked A. Ensure all burrs and sharp edges are removed.



INITIAL INSTALLATION (continued)

31. Install center bracket B brace (31) on vehicle frame (32) with four flat washers (3), two capscrews (9), and two self-locking nuts (2). Torque self-locking nuts to 55-65 lb-ft (75-88 N•m).



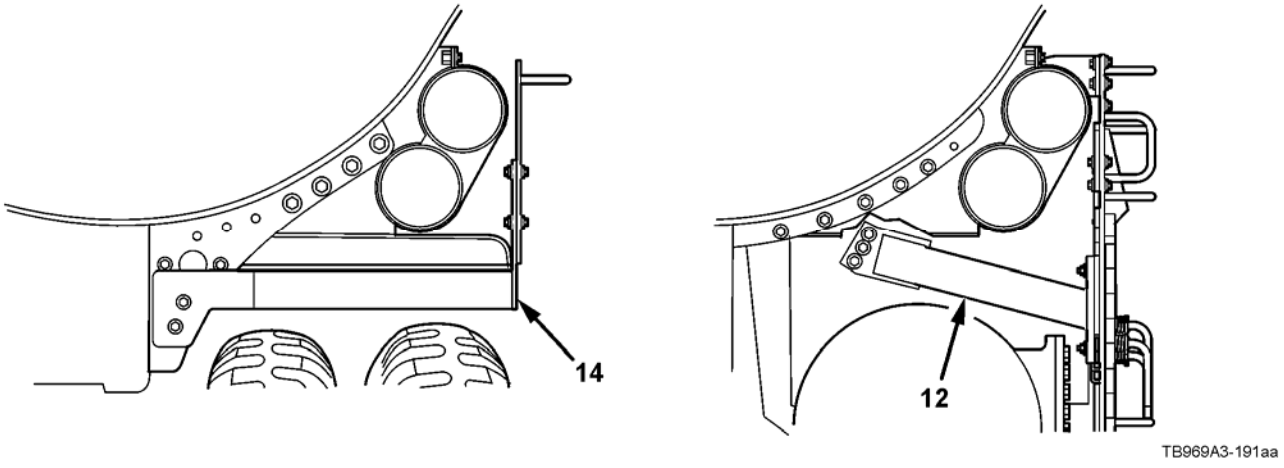
NOTE

Assistant will help with Steps 32 through 34.

32. Raise fender brackets (14) parallel to fender and hold while assistant tightens fender bracket hardware. Torque self-locking nuts to 55-65 lb-ft (75-88 N•m).

33. Raise rib bracket A center brace (12) until armor panels are straight and even; use hydraulic jack to lift armor paneling if necessary. Tighten all brace hardware. Torque self-locking nuts to 55-65 lb-ft (75-88 N•m).

34. Tighten all armor panel and bracket hardware. Torque capscrews and self-locking nuts to 55-65 lb-ft (75-88 N•m).



INITIAL INSTALLATION (continued)

NOTE

Armor door assemblies may or may not have door handles installed when shipped. If door handles are not installed they are supplied separately with each door assembly. Perform Steps 35 through 38 to install the door handle on all curbside door assemblies.

35. Position one Teflon washer on door handle.

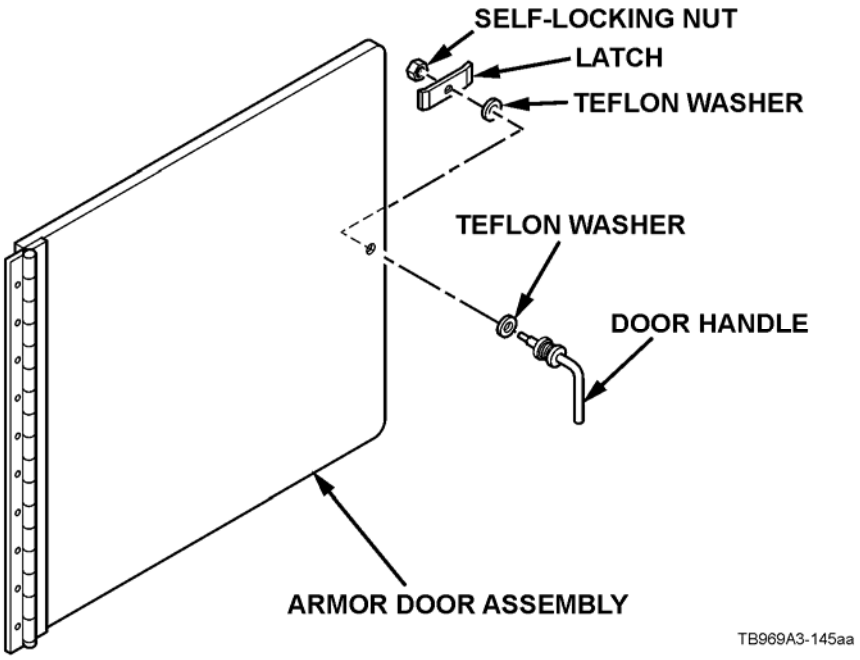
36. From the outside of the armor door assembly, insert threaded end of door handle through the hole in the armor door assembly. Position second Teflon washer on threaded end of door handle on in side of armor door assembly. Teflon washers must contact the exterior and interior surfaces of the armor door assembly.

NOTE

Ensure the key in the hole seats on the key of the threaded portion of the door handle. The latch must be positioned so that the bent ends of the latch point away from the armor door assembly.

37. Position latch onto threaded end of door handle and install with self-locking nut.

38. Check operation of door handle. Proper range of motion of door handle limits latch travel to the 90 degree arc between the latch stops on the inside surface of the armor door assembly and inside surface of the door frame.



INITIAL INSTALLATION (continued)

NOTE

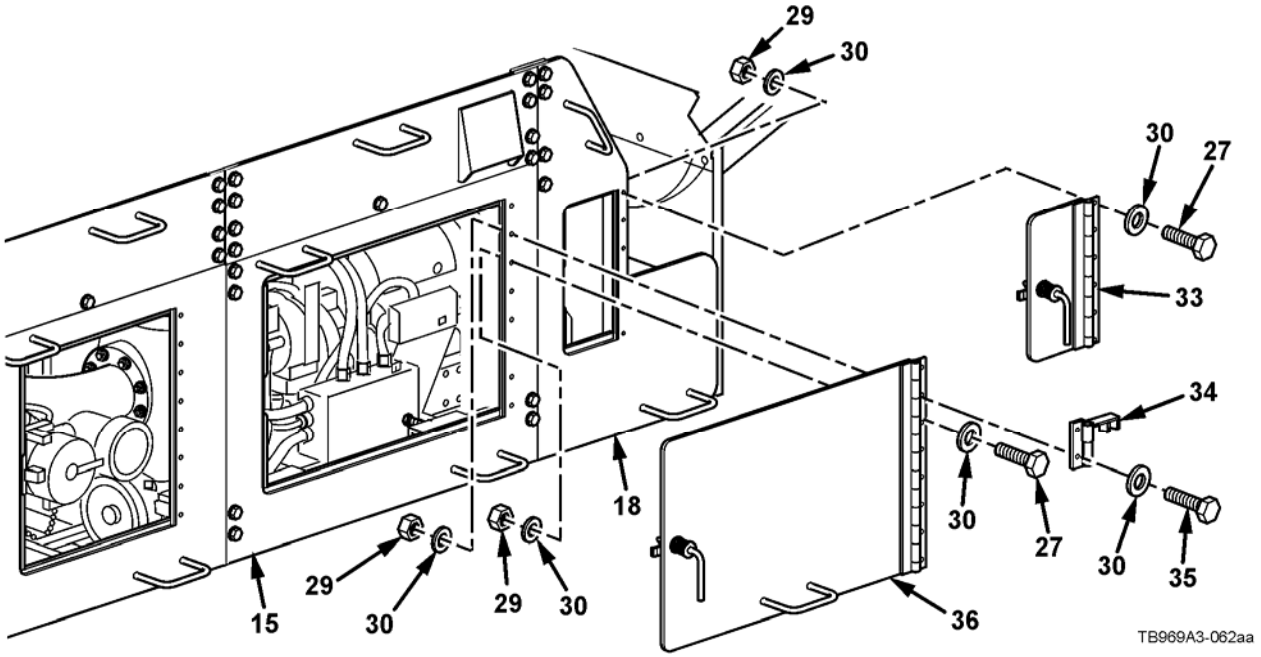
When installing door assemblies, ensure the gap is even around the outside of the door before tightening the hardware securely.

39. Install door assembly A (33) on front panel A (18) with twelve flat washers (30), six capscrews (27), and six self-locking nuts (29). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).

40. Install door assembly B (36) on front panel B (15) with twelve flat washers (30), six capscrews (27), and six self-locking nuts (29).

41. Install safety latch (34) on door assembly B (36) and front panel B (15) with four flat washers (30), two capscrews (35), and two self-locking nuts (29).

42. Torque door assembly B (36) and safety latch (34) self-locking nuts to 30-35 lb-ft (41-48 N•m).

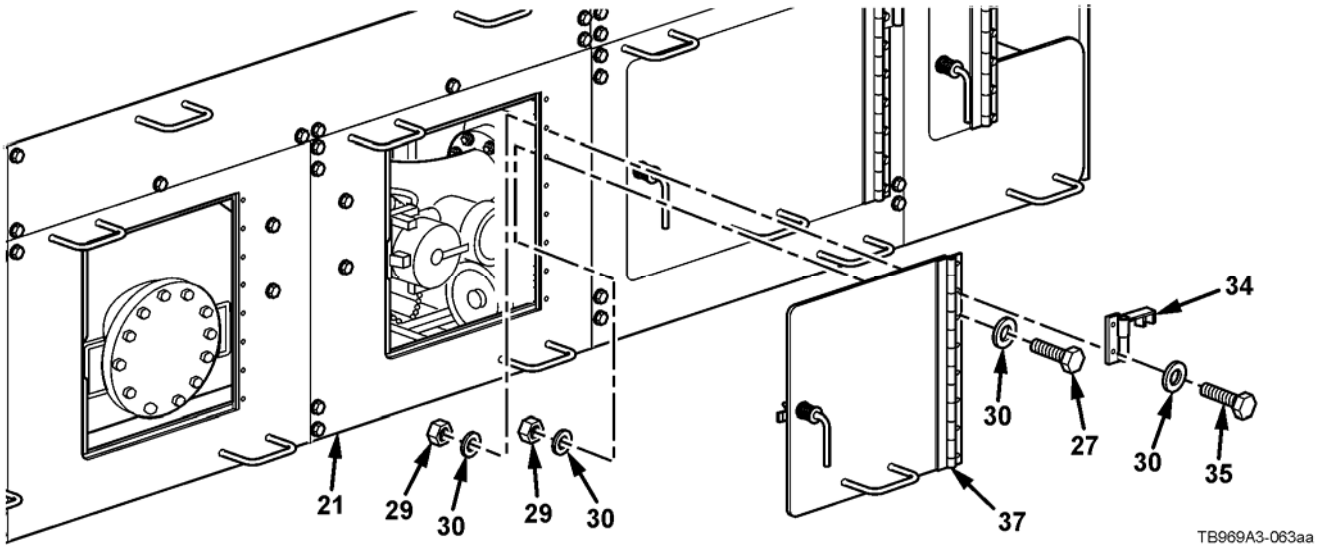


INITIAL INSTALLATION (continued)

43. Install door assembly C (37) on front panel C (21) with twelve flat washers (30), six capscrews (27), and six self-locking nuts (29).

44. Install safety latch (34) on door assembly C (37) and front panel C (21) with four flat washers (30), two capscrews (35), and two self-locking nuts (29).

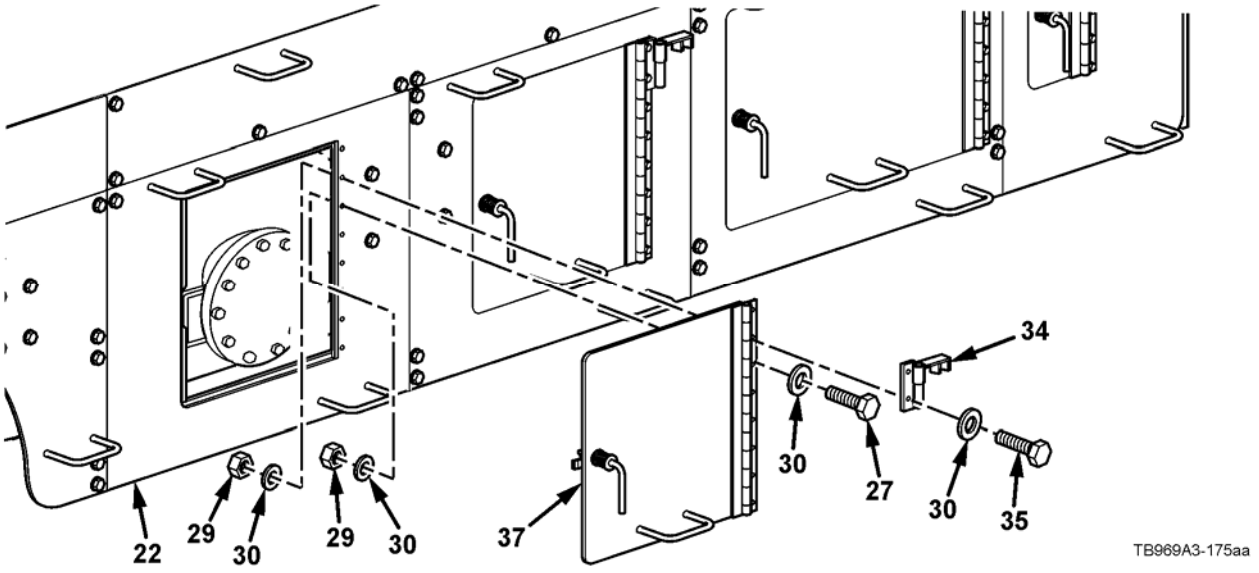
45. Torque door assembly B (37) and safety latch (34) self-locking nuts to 30-35 lb-ft (41-48 N•m).



46. Install door assembly C (37) on filter panel E (22) with twelve flat washers (30), six capscrews (27), and six self-locking nuts (29).

47. Install safety latch (34) on door assembly C (37) and filter panel E (22) with four flat washers (30), two capscrews (35), and two self-locking nuts (29).

48. Torque door assembly B (37) and safety latch (34) self-locking nuts to 30-35 lb-ft (41-48 N•m).



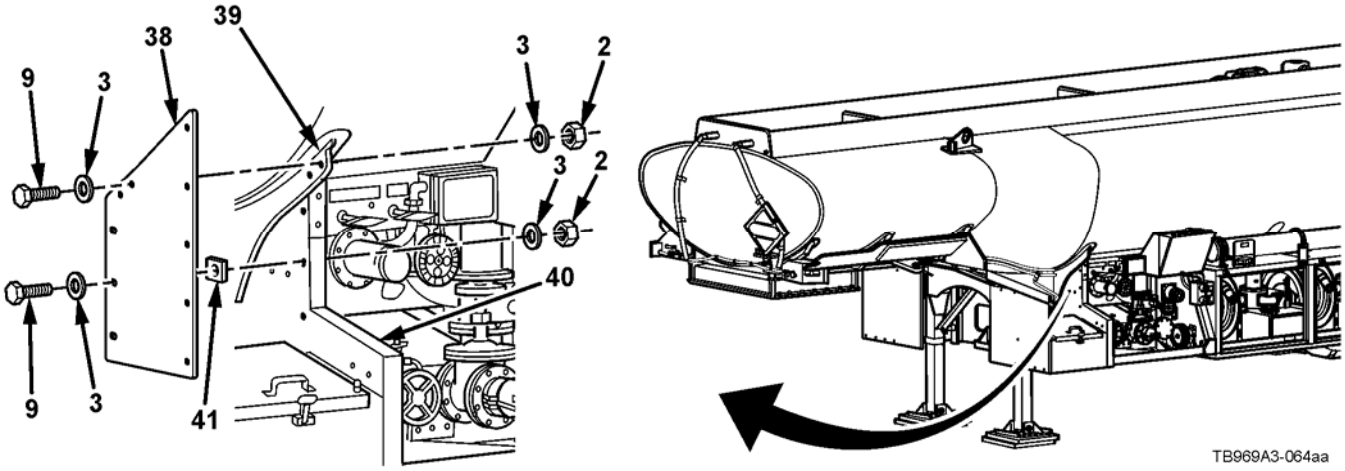
INITIAL INSTALLATION (continued)

NOTE

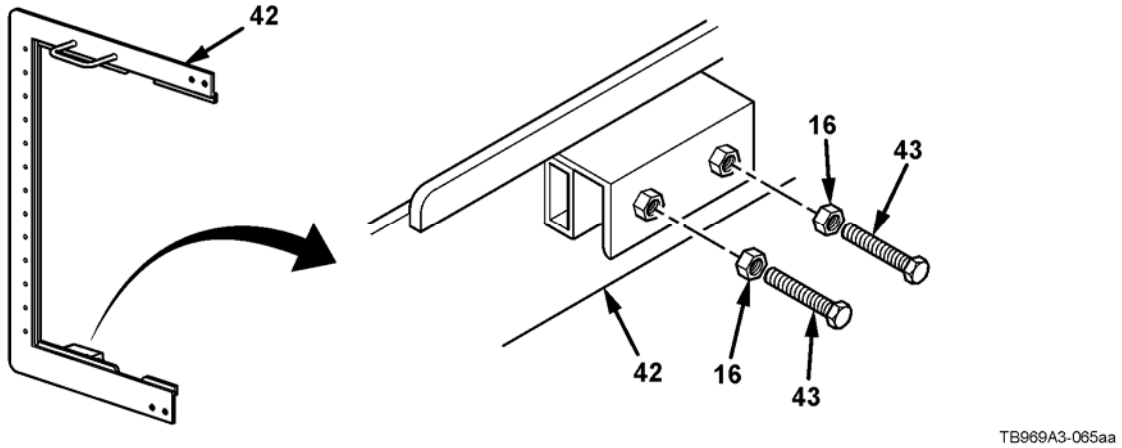
Do not fully tighten capscrews or clamping screws until armor is properly positioned and aligned on piping frame assembly.

49. Position support plate (38) on crossmember (39). Align holes of support plate (38) with existing holes of crossmember (39) and install with four flat washers (3), two capscrews (9), and two self-locking nuts (2). Do not fully tighten hardware.

50. Align slotted holes of support plate (38) with existing holes of piping frame assembly (40) and install with six flat washers (3), three capscrews (9), three shims (41), and three self-locking nuts (2). Do not fully tighten hardware.



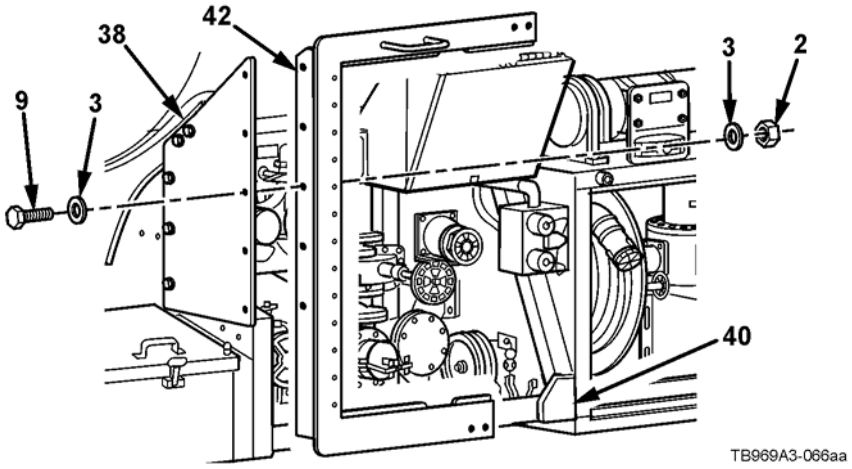
51. Install two capscrews (16) and two jam nuts (43) on front left door frame (42). Do not fully tighten hardware.



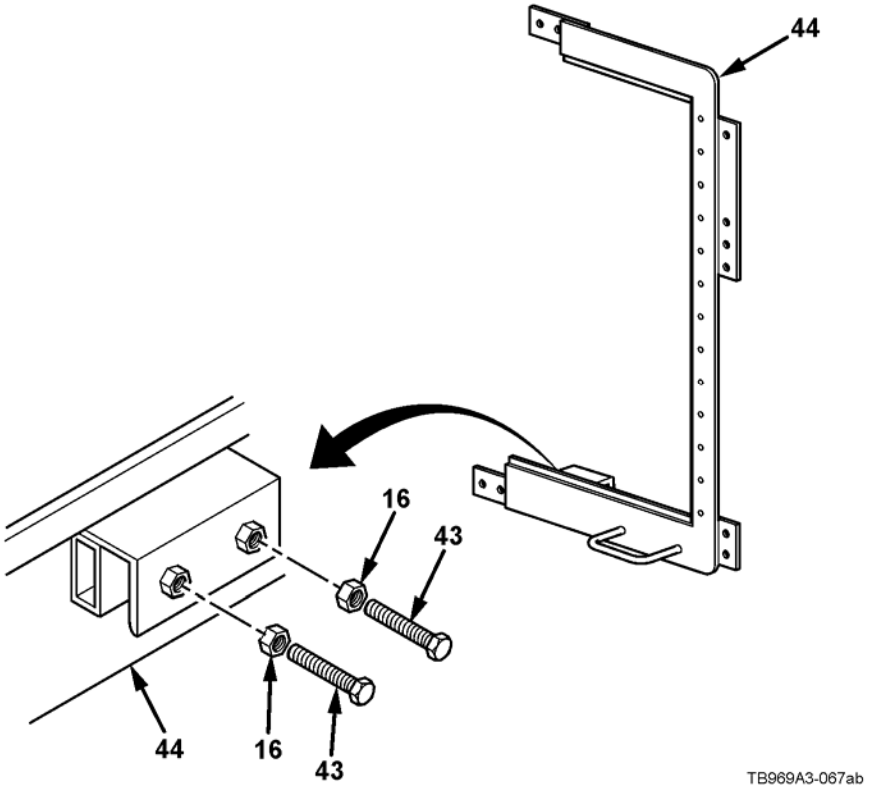
INITIAL INSTALLATION (continued)

52. Position front left door frame (42) on piping frame assembly (40) and support plate (38). Do not fully tighten hardware.

53. Align holes of front left door frame (42) with holes of support plate (38) and install with ten flat washers (3), five capscrews (9), and five self-locking nuts (2). Do not fully tighten hardware.



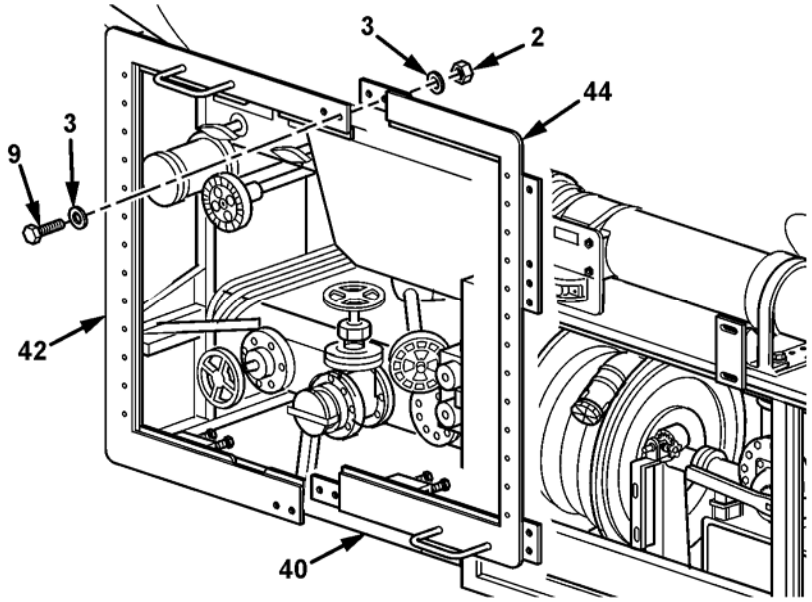
54. Install two capscrews (43) and two jam nuts (16) on front right door frame (44). Do not fully tighten hardware.



INITIAL INSTALLATION (continued)

55. Position front right door frame (44) on piping frame assembly (40) and front left door frame (42).

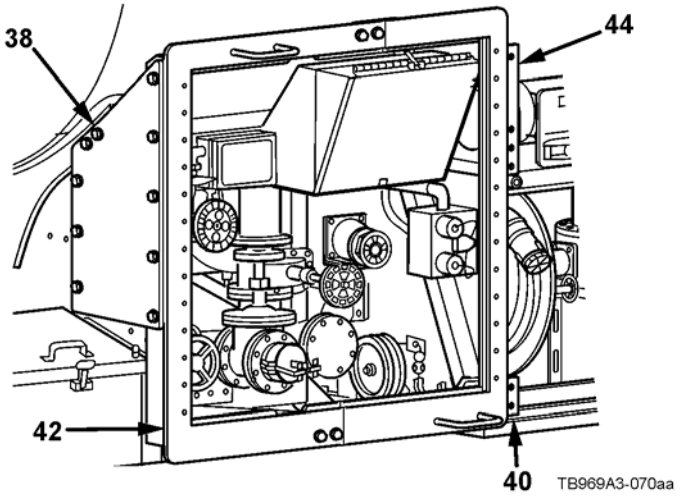
56. Align holes in front right door frame (44) with holes in front left door frame (42) and install with eight flat washers (3), four capscrews (9), and four self-locking nuts (2). Do not fully tighten hardware.



57. Push front right door frame (44) back and hold in place while capscrews (9) in slotted holes of support plate (38) are tightened.

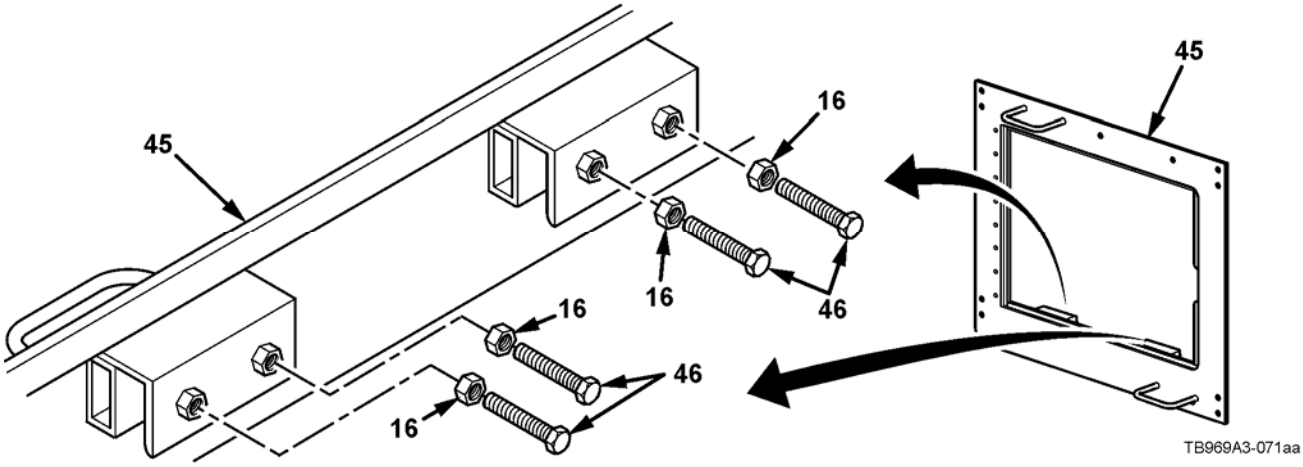
58. Tighten all support plate (38) hardware. Torque capscrews and self-locking nuts to 55-65 lb-ft (75-88 N•m).

59. Tighten all front right door frame (44) and front left door frame (42) hardware. Torque capscrews and self-locking nuts to 55-65 lb-ft (75-88 N•m).



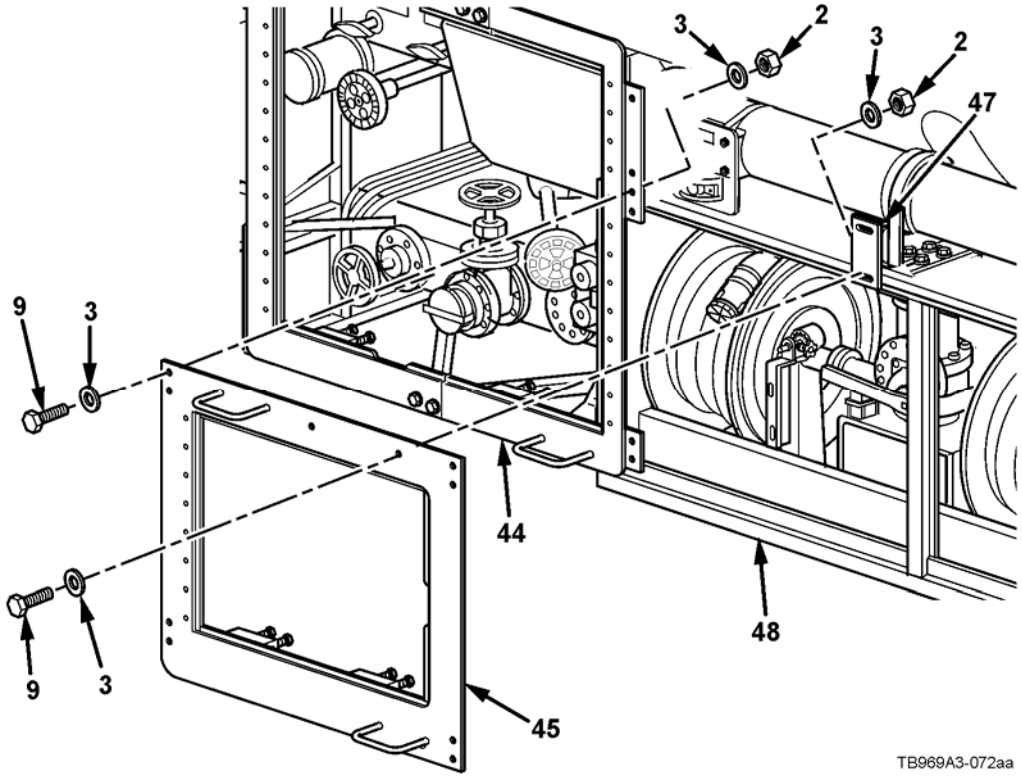
INITIAL INSTALLATION (continued)

60. Install four capscrews (46) and four jam nuts (16) on front panel F (45). Do not fully tighten hardware.



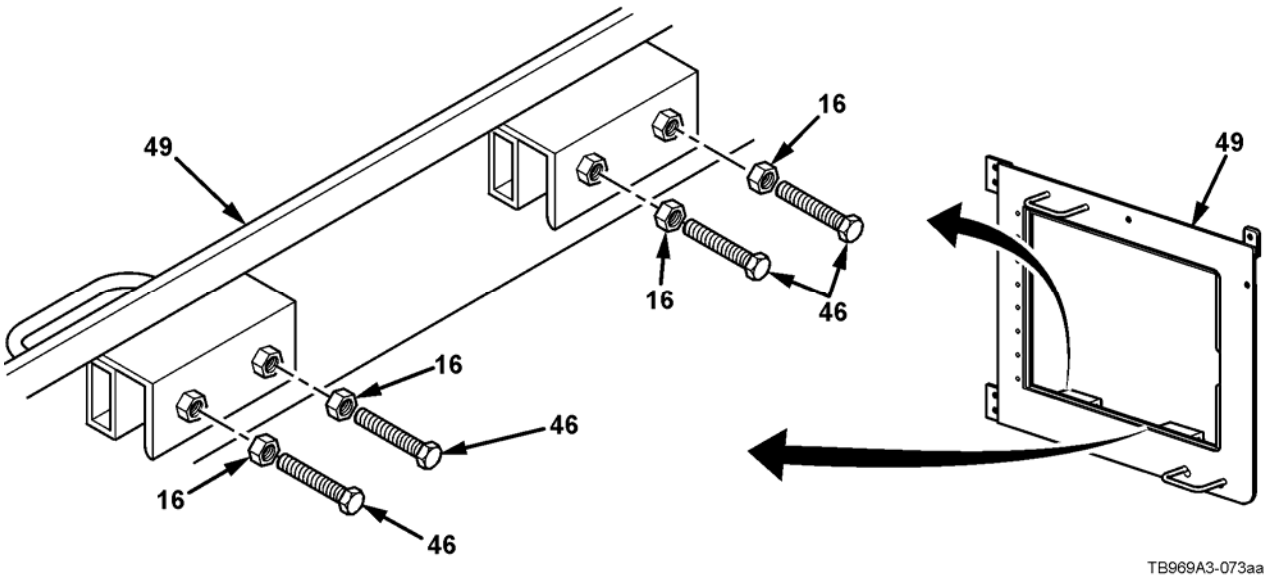
61. Position front panel F (45) on hose reel cabinet (48) and front right door frame (44). Align holes in front panel F (45) with holes in front right door frame (44) and install with eight flat washers (3), four capscrews (9), and four self-locking nuts (2). Do not fully tighten hardware.

62. Install front panel F (45) on tube canister bracket (47) with two flat washers (3), capscrew (9), and self-locking nut (2). Do not fully tighten hardware.

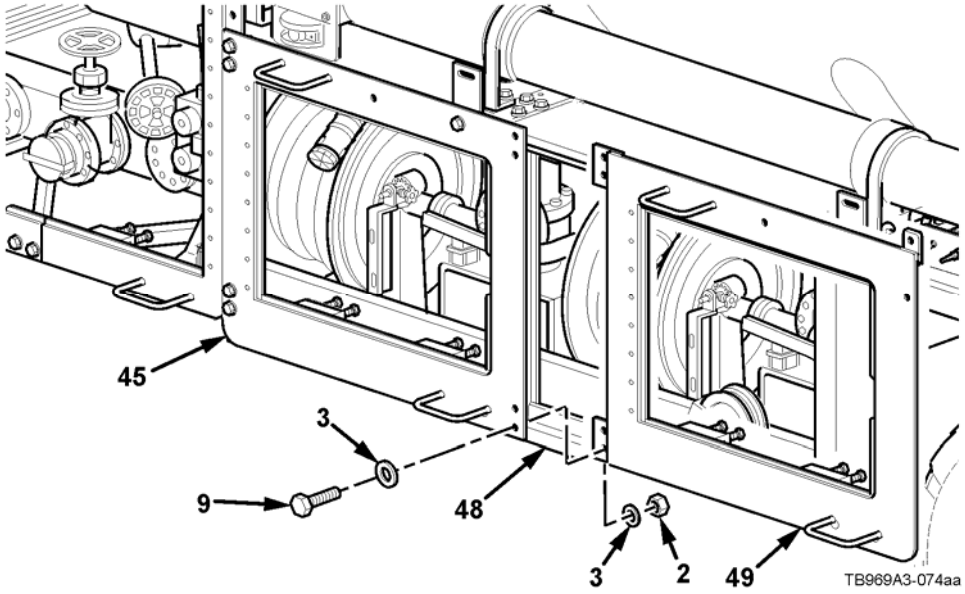


INITIAL INSTALLATION (continued)

63. Install four capscrews (46) and four jam nuts (16) on front panel G (49). Do not fully tighten hardware.



64. Position front panel G (49) on hose reel cabinet (48) and front panel F (45). Align holes of front panel G (49) with holes in front panel F (45) and install with four flat washers (3), two capscrews (9), and two self-locking nuts (2). Do not fully tighten hardware.

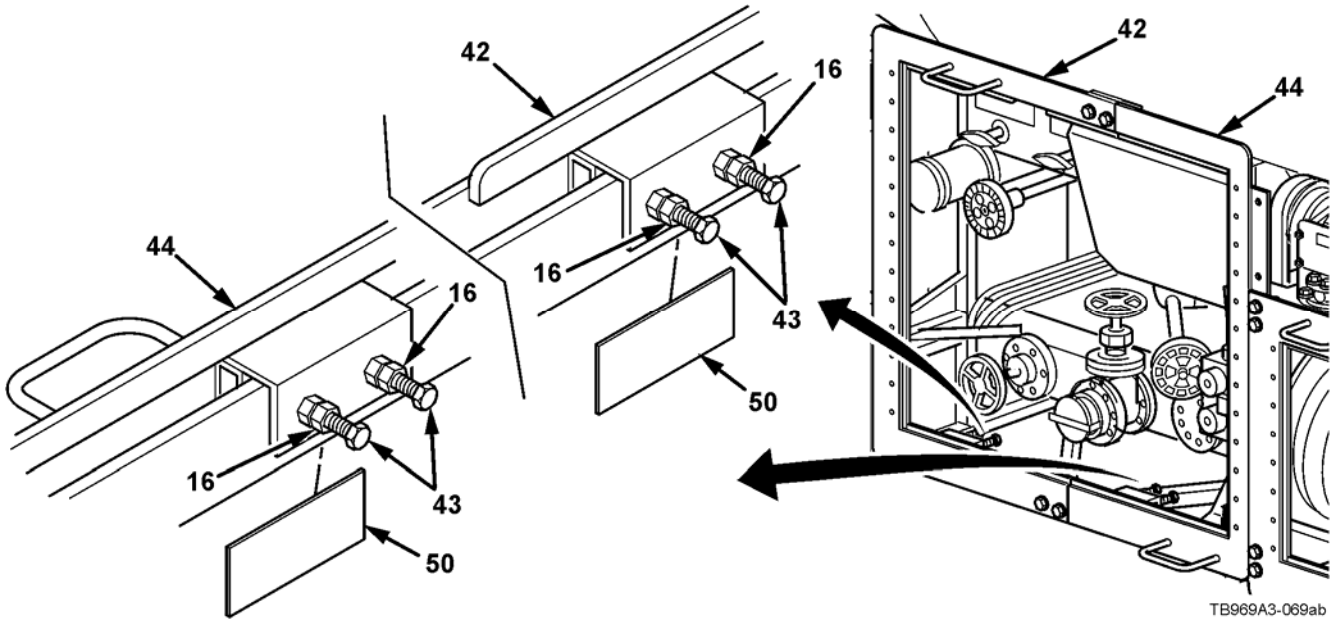


INITIAL INSTALLATION (continued)

65. Ensure front right door frame (44) and front left door frame (42) are flush with the bottom of the piping frame assembly.

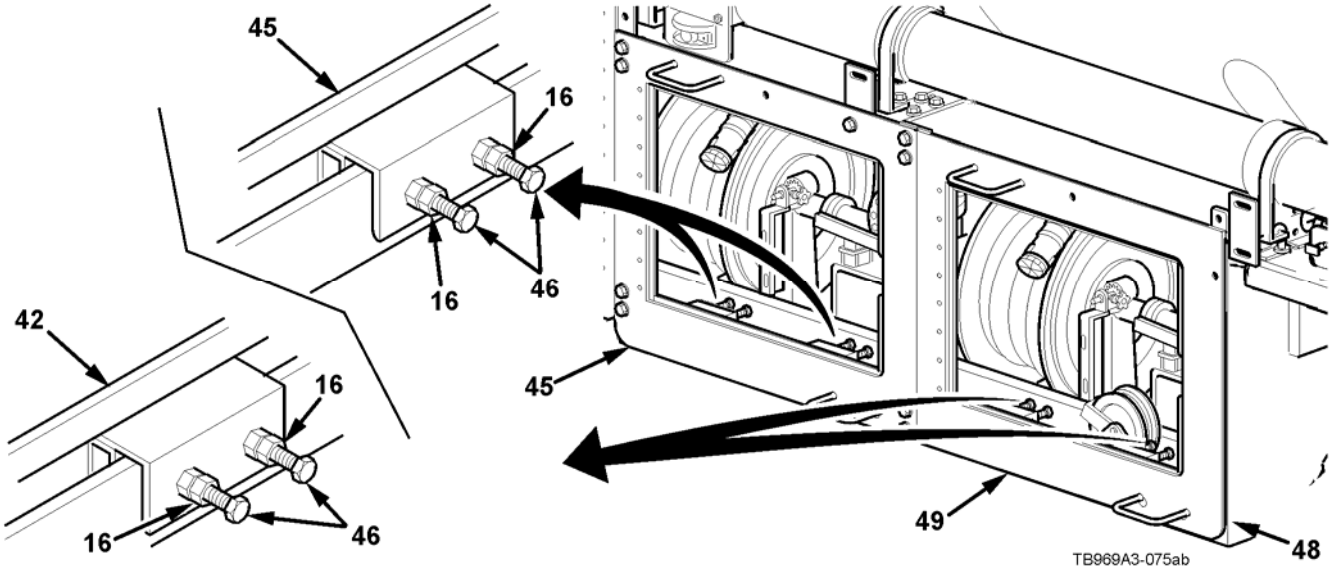
66. Insert two plate spacers (50) between two capscrews (43) of front right door frame (44) and front left door frame (42).

67. Tighten all capscrews (43) and jam nuts (16).



68. Ensure front panel G (42) and front panel F (45) are flush with the bottom of hose reel cabinet (48). Tighten all capscrews (20) and jam nuts (16).

69. Tighten all capscrews (46) and jam nuts (16).

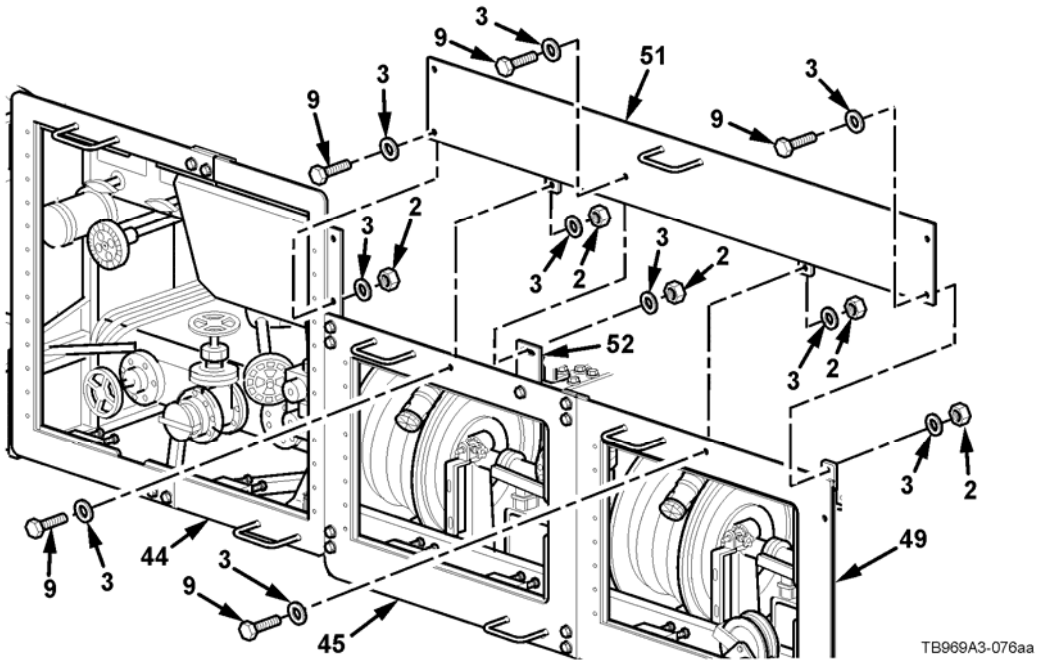


INITIAL INSTALLATION (continued)

70. Position front fender panel (51) on front right door frame (44), front panel G (42), and front panel F (45). Align holes of front fender panel (51) with holes in front right door frame (44) and install with four flat washers (3), two capscrews (9), and two self-locking nuts. Do not fully tighten hardware.

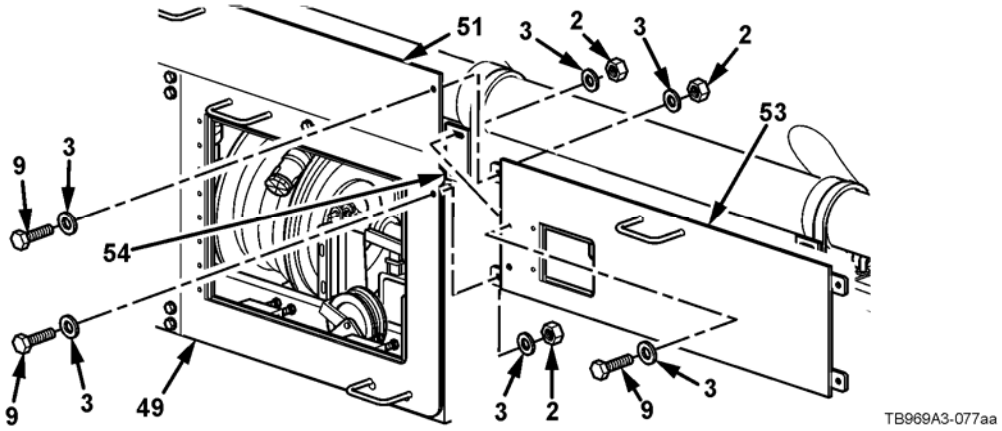
71. Install front fender panel (51) on front panel G (42) and front panel F (45) with six flat washers (3), three capscrews (9), and three self-locking nuts (2). Do not fully tighten hardware.

72. Install front fender panel (51) on tube canister bracket (52) with two flat washers (3), capscrew (9), and self-locking nut (2). Do not fully tighten hardware.



73. Position center fender panel (53) on front fender panel (51). Align holes of center fender panel (53) with holes in front fender panel (51) and install with four flat washers (3), two capscrews (9), and two self-locking nuts (2). Do not fully tighten hardware.

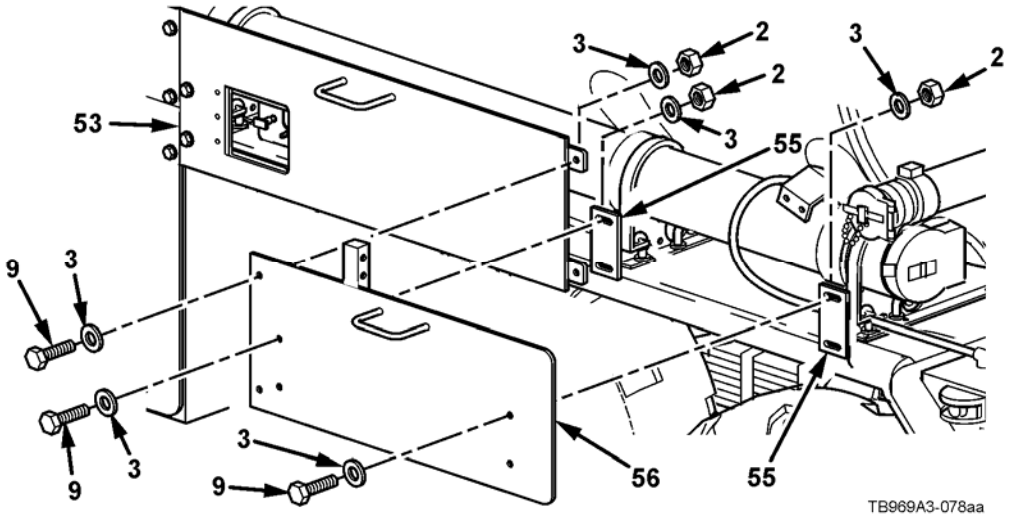
74. Install center fender panel (53) on tube canister bracket (54) with four flat washers (3), two capscrews (9), and two self-locking nuts (2). Do not fully tighten hardware.



INITIAL INSTALLATION (continued)

75. Position rear fender panel (56) on center fender panel (53). Align holes of rear fender panel (56) with holes in center fender panel (53) and install with four flat washers (3), two capscrews (9), and two self-locking nuts. Do not fully tighten hardware.

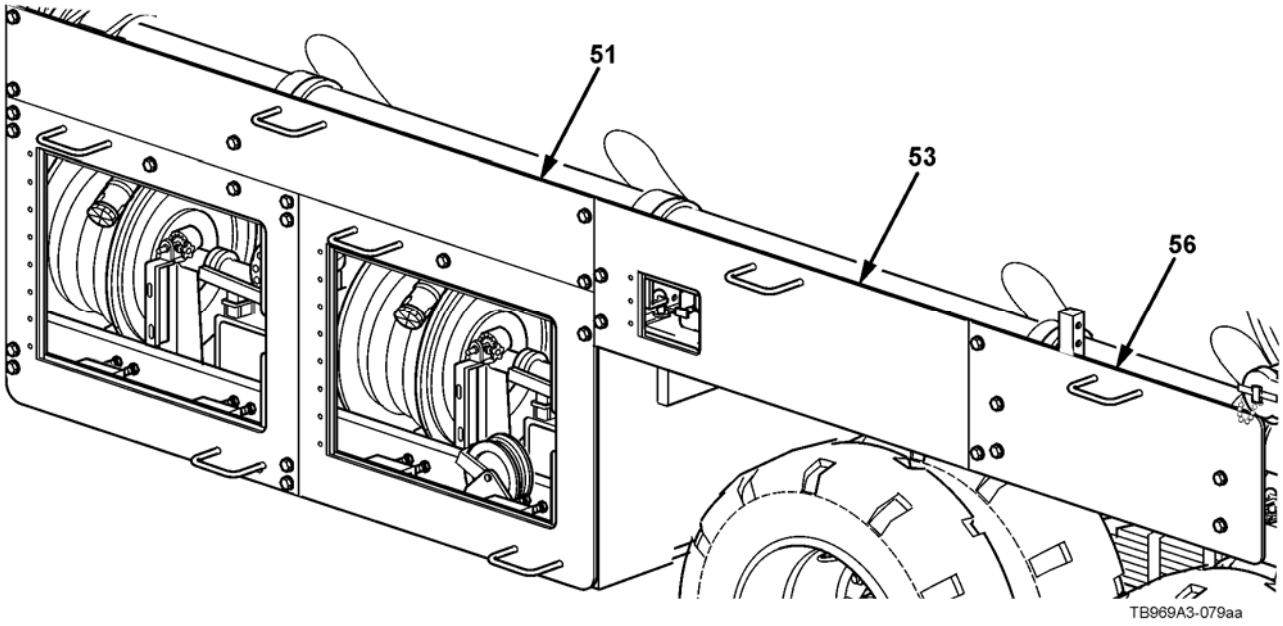
76. Install rear fender panel (56) on two tube canister brackets (55) with eight flat washers (3), four capscrews (9), and four self-locking nuts (2). Do not fully tighten hardware.



77. Tighten all rear fender panel (56) hardware. Torque capscrews and self-locking nuts to 55-65 lb-ft (75-88 N•m).

78. Tighten all center fender panel (53) hardware. Torque capscrews and self-locking nuts to 55-65 lb-ft (75-88 N•m).

79. Tighten all front fender panel (51) hardware. Torque capscrews and self-locking nuts to 55-65 lb-ft (75-88 N•m).



INITIAL INSTALLATION (continued)

NOTE

Armor door assemblies may or may not have door handles installed when shipped. If door handles are not installed they are supplied separately with each door assembly. Perform Steps 80 through 83 to install the door handle on all curbside door assemblies.

80. Position one Teflon washer on door handle.

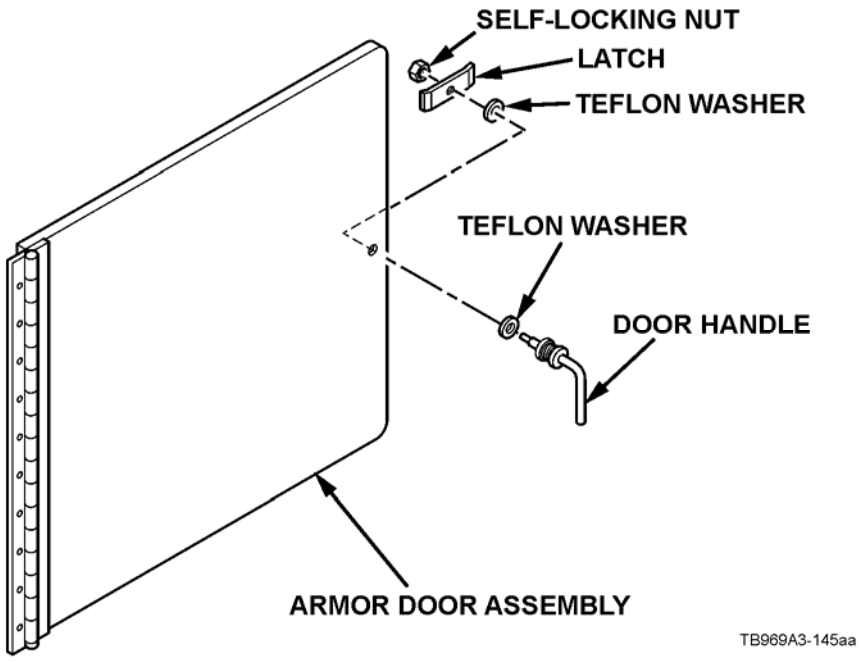
81. From the outside of the armor door assembly, insert threaded end of door handle through the hole in the armor door assembly. Position second Teflon washer on threaded end of door handle on in side of armor door assembly. Teflon washers must contact the exterior and interior surfaces of the armor door assembly.

NOTE

Ensure the key in the hole seats on the key of the threaded portion of the door handle. The latch must be positioned so that the bent ends of the latch point away from the armor door assembly.

82. Position latch onto threaded end of door handle and install with self-locking nut.

83. Check operation of door handle. Proper range of motion of door handle limits latch travel to the 90 degree arc between the latch stops on the inside surface of the armor door assembly.



INITIAL INSTALLATION (continued)

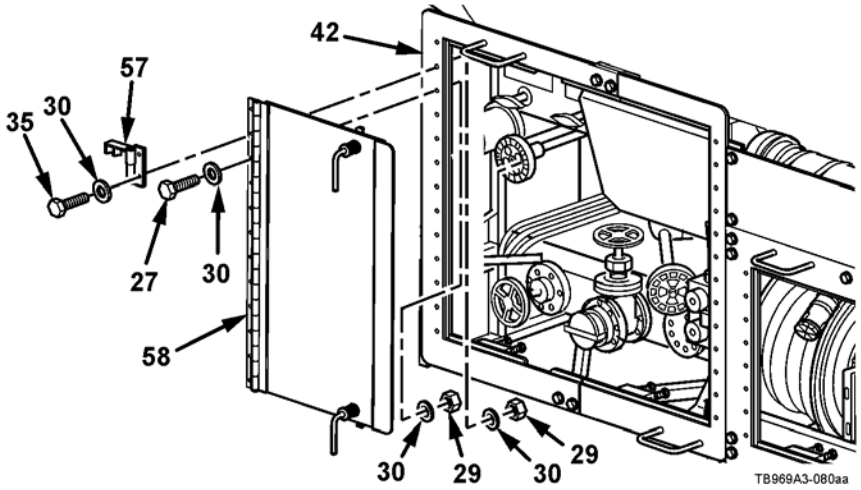
NOTE

When installing door assemblies, ensure the gap is even around the outside of the door before tightening the hardware securely.

84. Install door assembly (58) on front left door frame (42) with twenty-two flat washers (30), eleven capscrews (27), and eleven self-locking nuts (29).

85. Install safety latch (57) on door assembly (58) and front left door frame (42) with four flat washers (30), two capscrews (335), and two self-locking nuts (29).

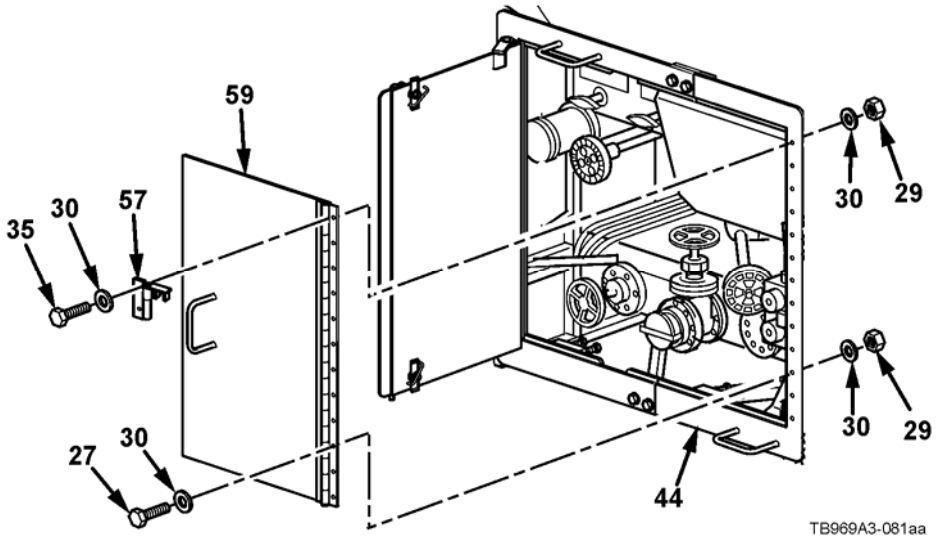
86. Torque door assembly (58) and safety latch (57) self-locking nuts to 30-35 lb-ft (41-48 N•m).



87. Install door assembly (59) on front right door frame (44) with twenty-two flat washers (30), eleven capscrews (27), and eleven self-locking nuts (29).

88. Install safety latch (57) on door assembly (59) and front right door frame (44) with four flat washers (30), two capscrews (35), and two self-locking nuts (27).

89. Torque door assembly (59) and safety latch (57) self-locking nuts to 30-35 lb-ft (41-48 N•m).

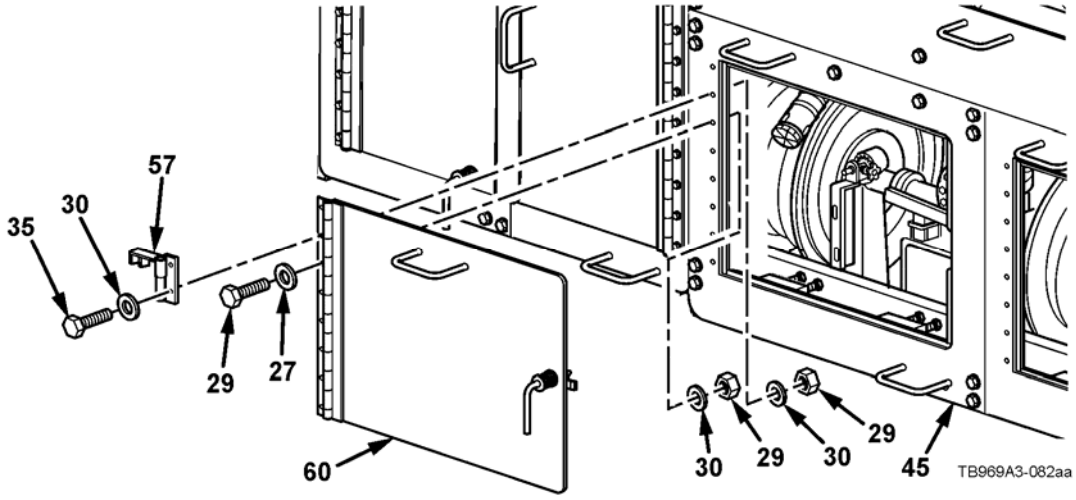


INITIAL INSTALLATION (continued)

90. Install door assembly F (60) on front panel F (45) with twelve flat washers (30), six capscrews (27), and six self-locking nuts (29).

91. Install safety latch (57) on door assembly F (60) and front panel F (45) with four flat washers (30), two capscrews (35), and two self-locking nuts (29).

92. Torque door assembly (60) and safety latch (57) self-locking nuts to 30-35 lb-ft (41-48 N•m).

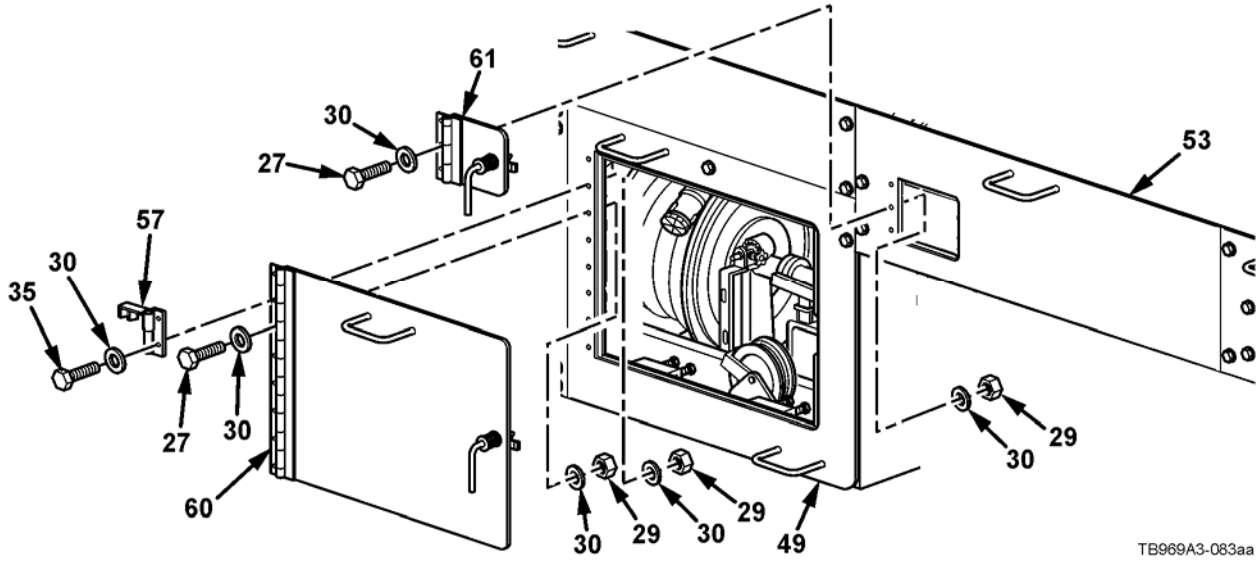


93. Install door assembly F (60) on front panel G (49) with twelve flat washers (30), six capscrews (27), and six self-locking nuts (29).

94. Install safety latch (57) on door assembly F (60) and front panel G (49) with four flat washers (30), two capscrews (35), and two self-locking nuts (29).

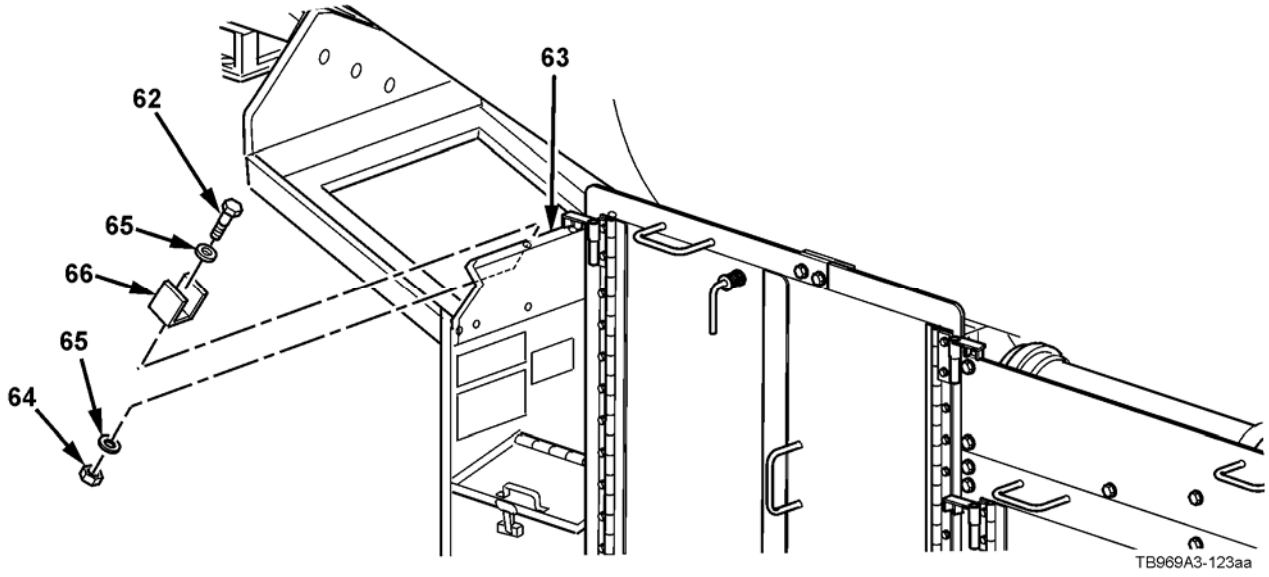
95. Torque door assembly (60) and safety latch (57) self-locking nuts to 30-35 lb-ft (41-48 N•m).

96. Install door assembly (61) on center fender panel (53) with six flat washers (30), three capscrews (27), and three self-locking nuts (29). Torque self-locking nuts to 30-35 lb-ft (41-48 N•m).

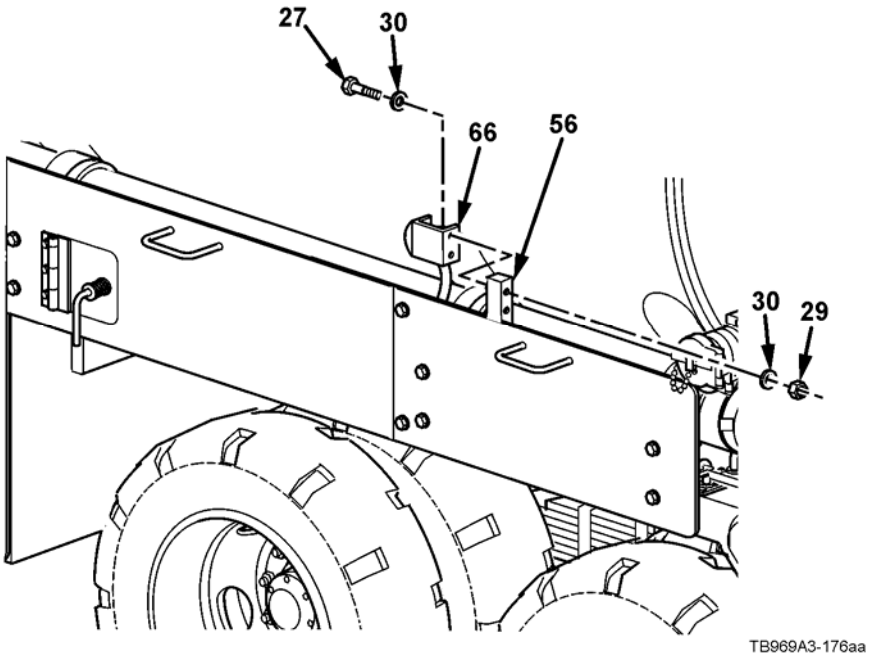


INITIAL INSTALLATION (continued)

97. Install landing leg handle bracket (66), previously removed, on post bracket (63) with four flat washers (65), two capscrews (62), and two self-locking nuts (64).

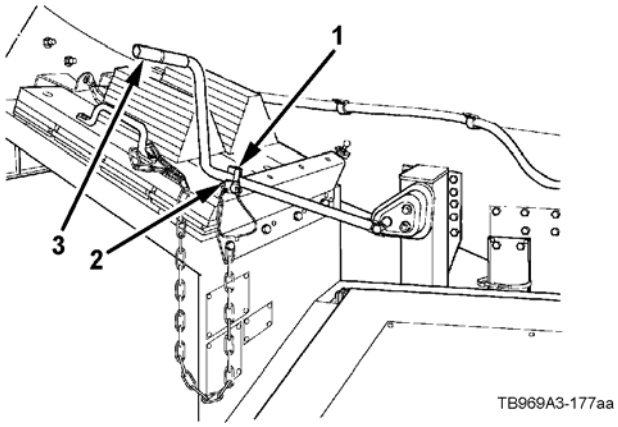


98. Install ABS marker light (66) on rear fender panel (56) with four flat washers (30), two capscrews (27), and two self-locking nuts (29).



FOLLOW-ON TASK

1. Install curbside front-rear wheels on semitrailer, refer to TM 9-2330-330-14&P.
2. Stow landing leg ratchet handle (3) in bracket (1) with safety pin (2).



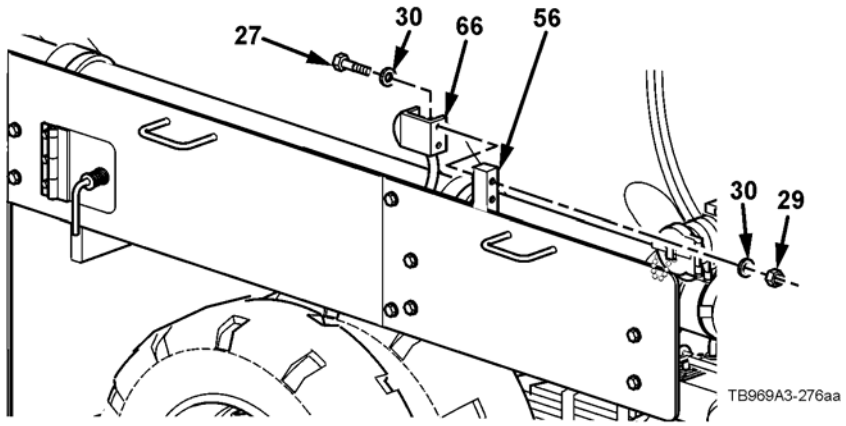
3. Ensure the FTSS repair kit is stowed in tool box.
4. Check operation of door handle. Proper range of motion of door handle limits latch travel to the 90 degree arc between the latch stops on the inside surface of the armor door assembly and inside surface of the door frame.
5. Release safety latch and lose armor door assembly. Rotate door handle to latched position. Door handle should be in downward position. Check that armor door assembly is securely closed.

REMOVAL/REPLACEMENT

WARNING

The armor plates of the Add-On-Armor (AOA) kit are heavy and awkward. Two personnel are required at all times when installing the armor plates on the semitrailer. Failure to do so may result in injury to personnel or damage to equipment.

1. Remove two capscrews (27), two self-locking nuts (39), four flat washers (30), and ABS marker light (66) from rear fender panel (56). Discard nuts.

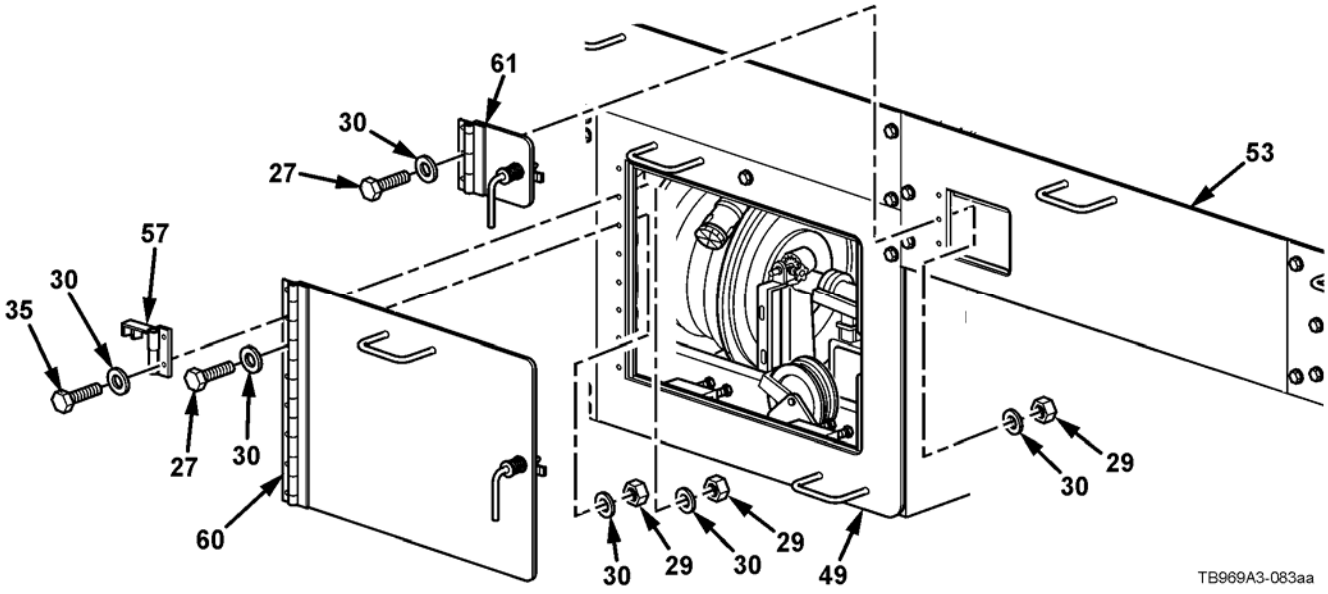


REMOVAL/REPLACEMENT (continued)

2. Remove three capscrews (27), three self-locking nuts (29), six flat washers (30), and door assembly B (61) from center fender panel (53). Discard nuts.

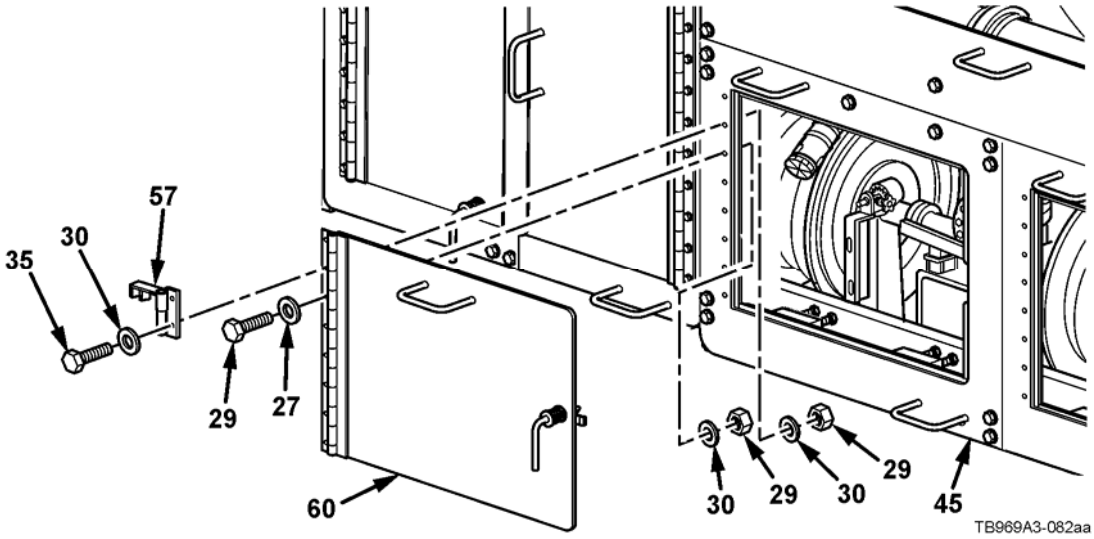
3. Remove two capscrews (35), two self-locking nuts (29), four flat washers (30), and safety latch (57) from door assembly F (60) and front panel G (49). Discard nuts.

4. Remove six capscrews (27), six self-locking nuts (29), twelve flat washers (30), and door assembly F (60) from front panel G (49). Discard nuts.



5. Remove two capscrews (35), two self-locking nuts (29), four flat washers (30), and safety latch (57) from door assembly F (60) and front panel F (45). Discard nuts.

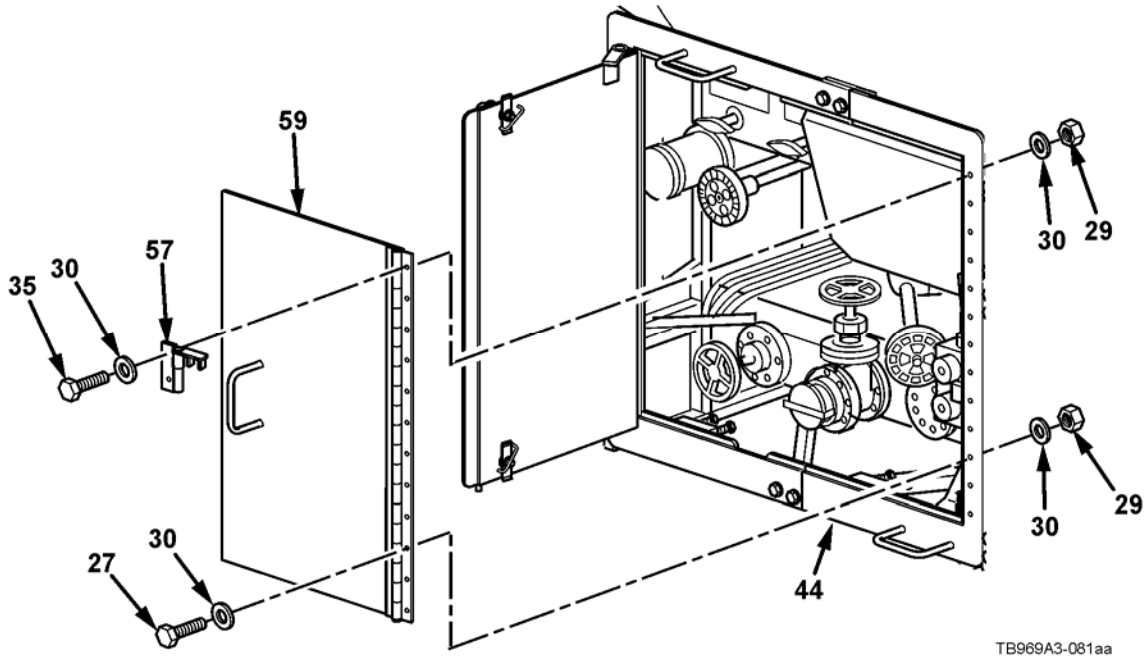
6. Remove six capscrews (29), six self-locking nuts (29), twelve flat washers (30), and door assembly F (60) from front panel F (45). Discard nuts.



REMOVAL/REPLACEMENT (continued)

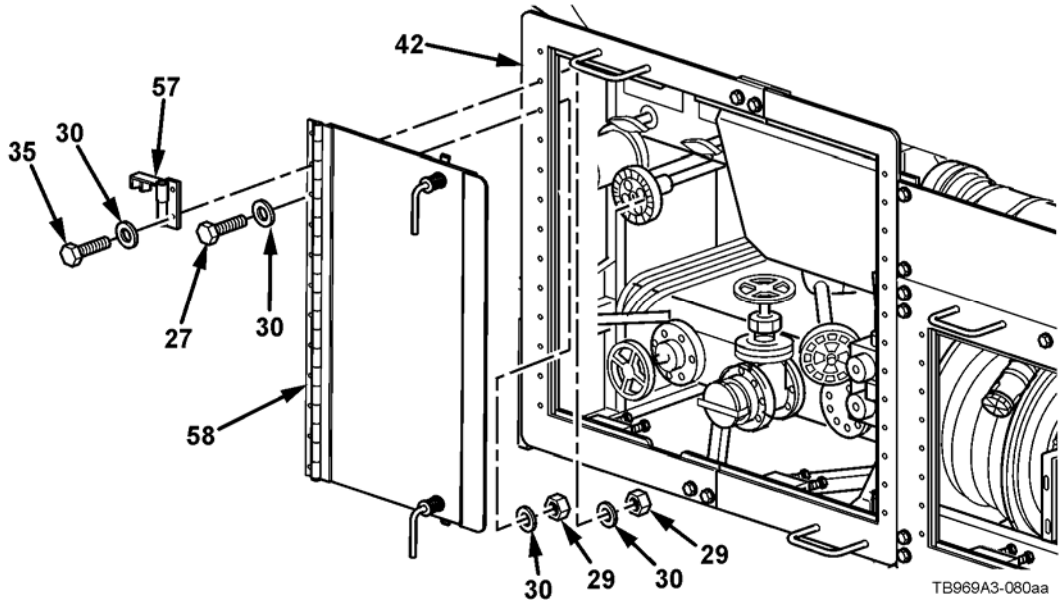
7. Remove two capscrews (35), two self-locking nuts (29), four flat washers (30), and safety latch (57) from door assembly (59) and front right door frame (44). Discard nuts.

8. Remove eleven capscrews (27), eleven self-locking nuts (29), twenty-two flat washers (30), and door assembly (59) from front right door frame (44). Discard nuts.



9. Remove two capscrews (35), two self-locking nuts (29), four flat washers (30), and safety latch (57) from door assembly (58) and front left door frame (47). Discard nuts.

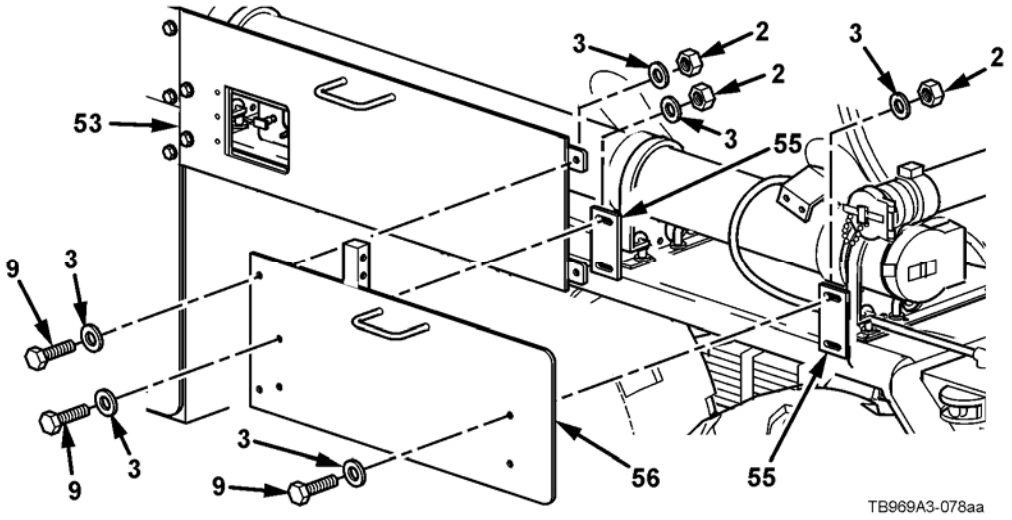
10. Remove eleven capscrews (27), eleven self-locking nuts (29), twenty-two flat washers (30), and door assembly (58) from front right door frame (42). Discard nuts.



REMOVAL/REPLACEMENT (continued)

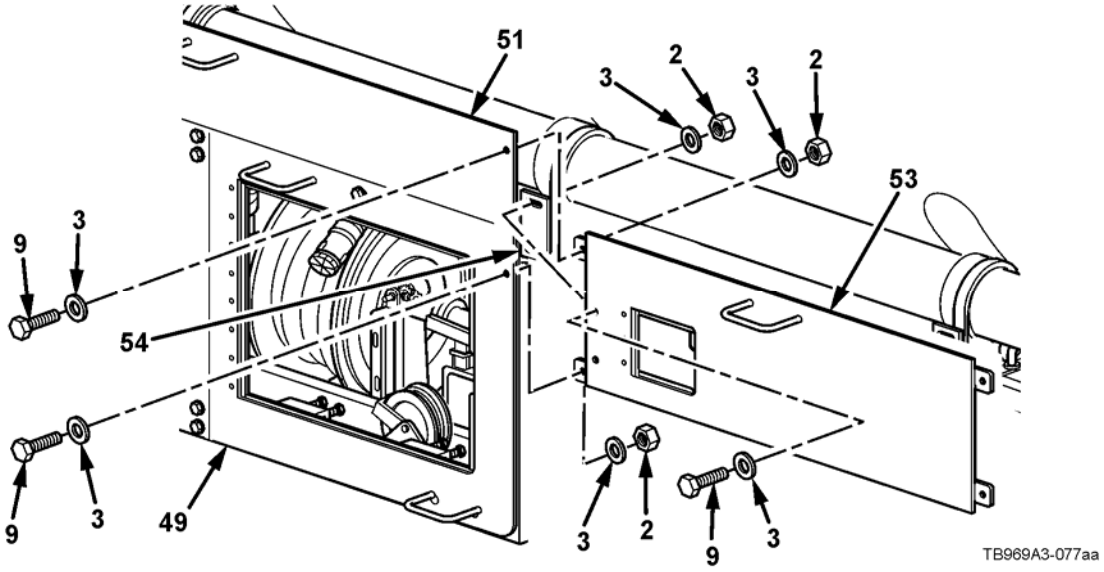
11. Remove four capscrews (9), four self-locking nuts (2), eight flat washers (3), and rear fender panel (56) from two tube canister brackets (55). Discard nuts.

12. Remove two capscrews (9), two self-locking nuts (2), four flat washers (3), and rear fender panel (56) from center panel fender (53). Discard nuts.



13. Remove two capscrews (9), two self-locking nuts (2), four flat washers (3), and center fender panel (53) from tube canister bracket (54). Discard nuts.

14. Remove two capscrews (9), two self-locking nuts (2), four flat washers (3), and center panel fender (53) form front fender panel (51) and front panel G (49). Discard nuts.

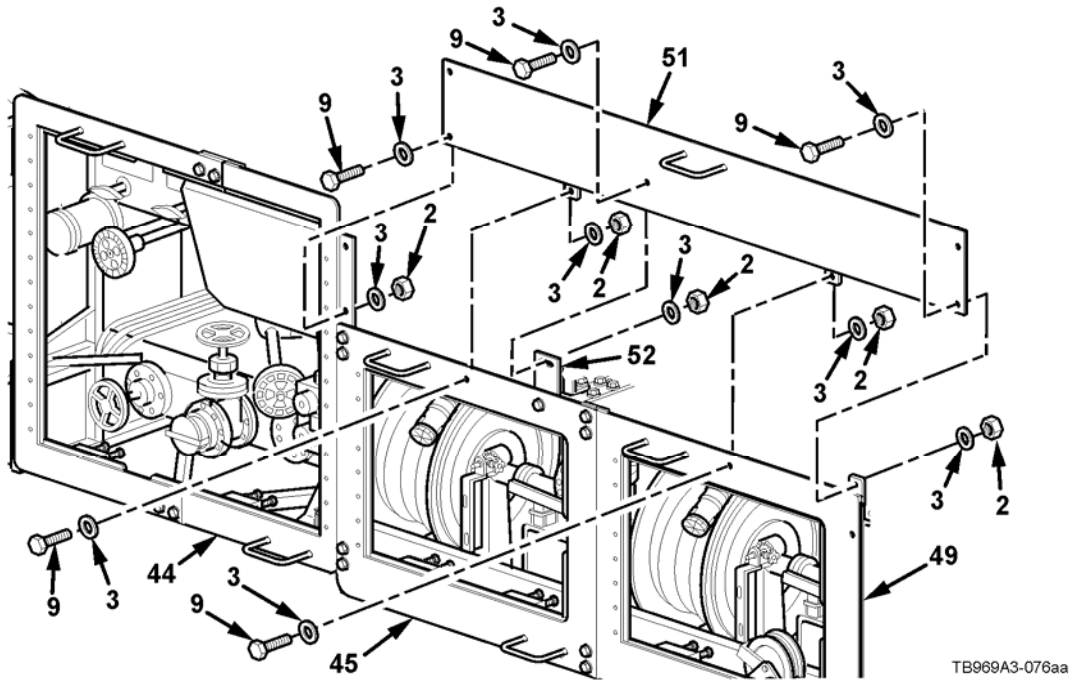


REMOVAL/REPLACEMENT (continued)

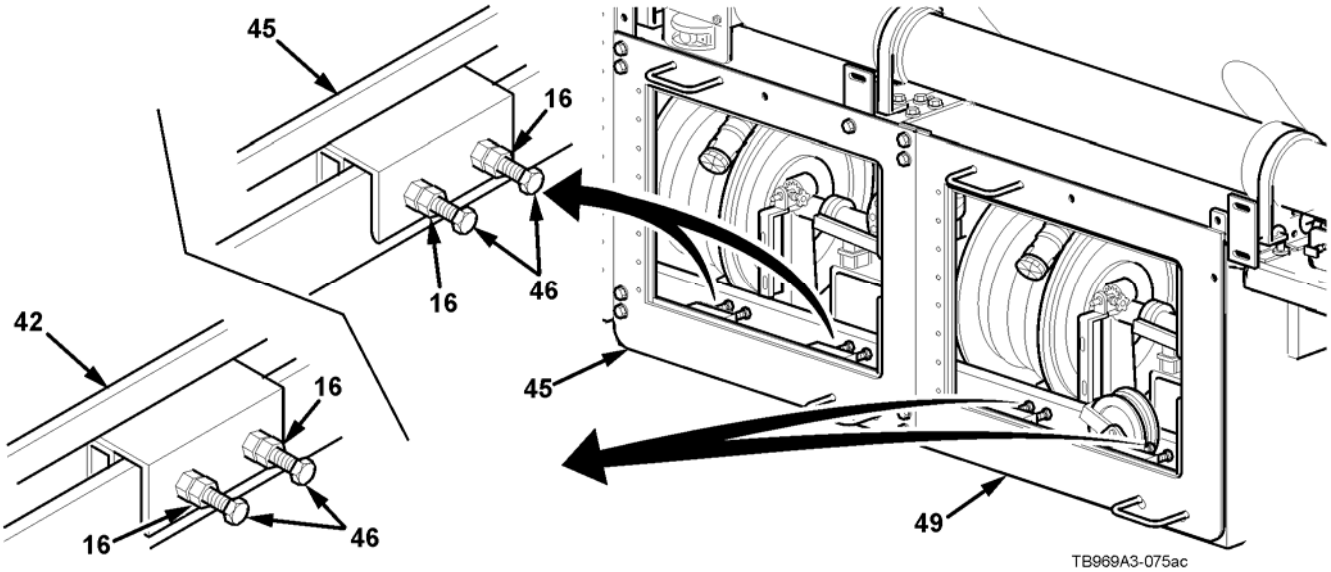
15. Remove capscrew (9), self-locking nut (2), two flat washers (3), and front fender panel (51) from tube canister bracket (52). Discard nut.

16. Remove three capscrews (9), three self-locking nuts (2), six flat washers (3), and front fender panel (51) from front panel G (49) and front panel F (45). Discard nuts.

17. Remove two capscrews (9), two self-locking nuts (2), four flat washers (3), and front fender panel (51) from front right door frame (44). Discard nuts.

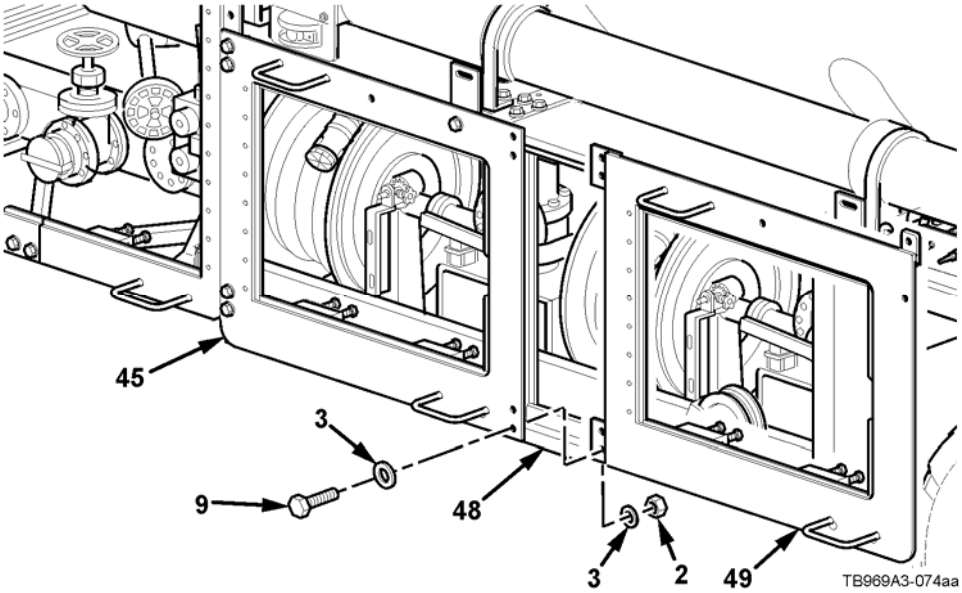


18. Loosen four jam nuts (16) and capscrews (46) on front panel G (49) and front panel F (45).



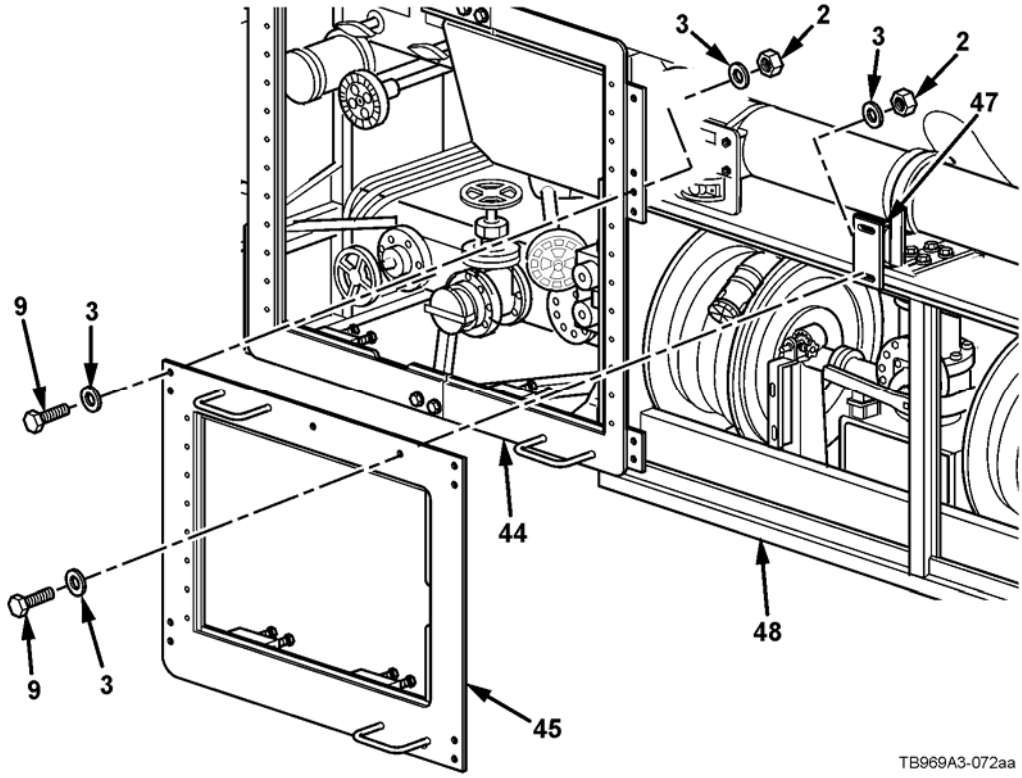
REMOVAL/REPLACEMENT (continued)

19. Remove four capscrews (9), four self-locking nuts (2), eight flat washers (3), and front panel G (49) from front panel F (45) and hose reel housing (48). Discard nuts.



20. Remove capscrew (9), self-locking nut (2), two flat washers (3), and front panel F (45) from tube canister bracket (47). Discard nut.

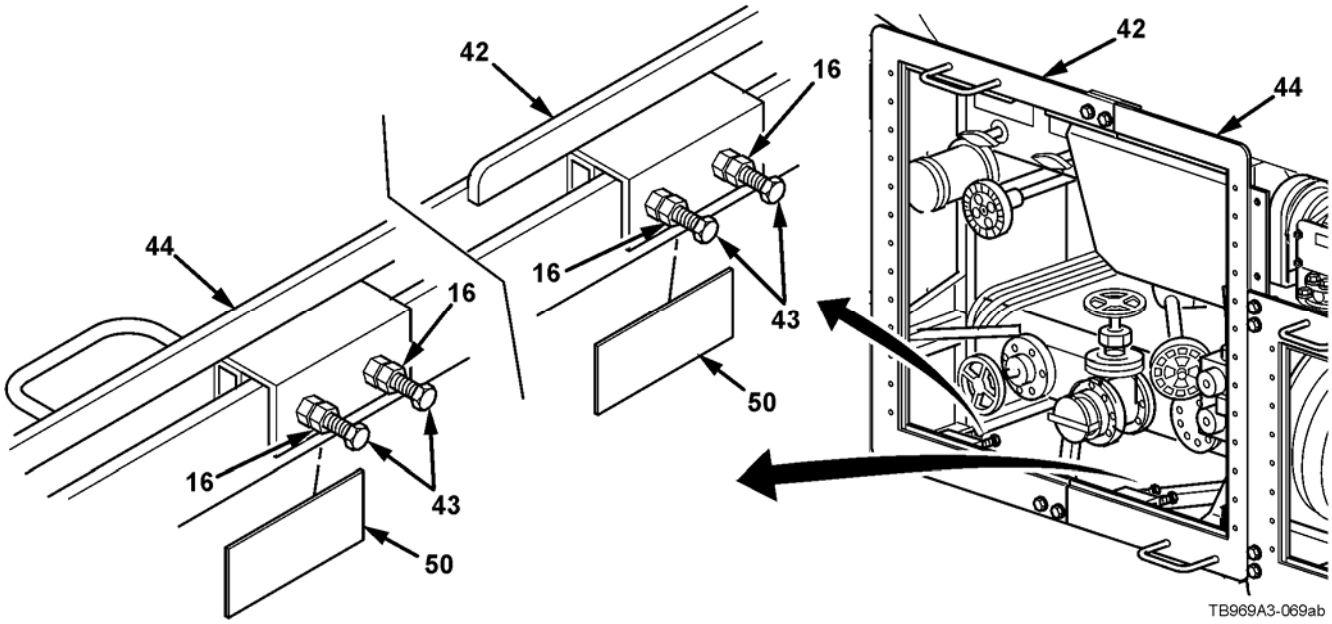
21. Remove four capscrews (9), four self-locking nuts (2), eight flat washers (3), and front panel F (45) from front right door frame (44) and hose reel housing (48). Discard nuts.



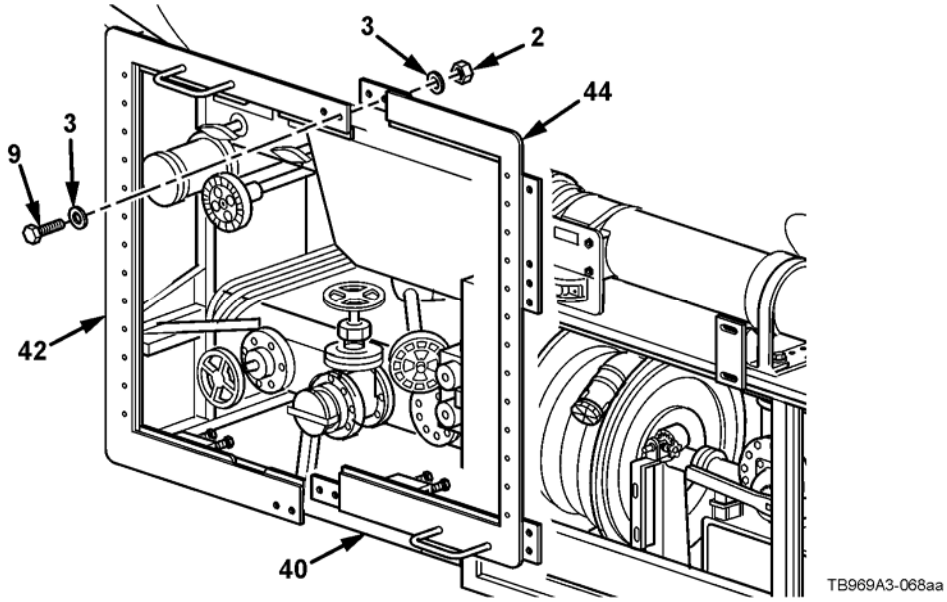
REMOVAL/REPLACEMENT (continued)

22. Loosen two jam nuts (16) and two capscrews (43), on front right door frame (44) and remove spacer plate (50).

23. Loosen two jam nuts (16) and two capscrews (43), on front left door frame (42) and remove spacer plate (50).

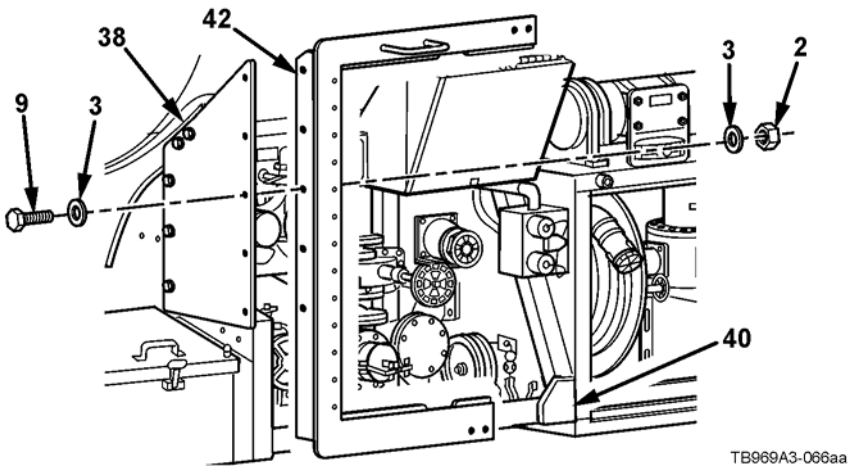


24. Remove four capscrews (9), four self-locking nuts (2), eight flat washers (3), and front right door frame (44) from front left door frame (42) and piping frame assembly (40). Discard nuts.



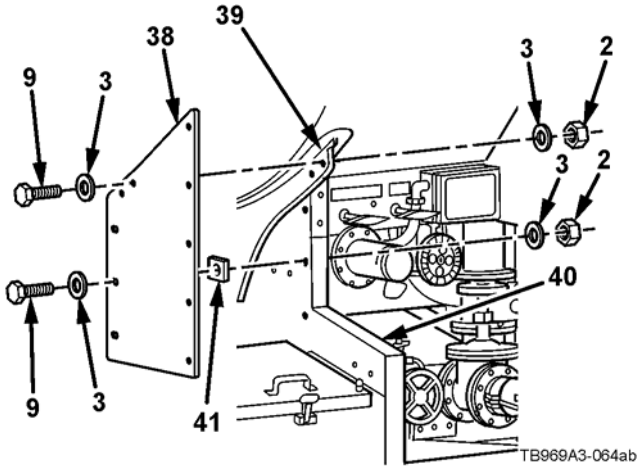
REMOVAL/REPLACEMENT (continued)

25. Remove five capscrews (9), five self-locking nuts (2), ten flat washers (3), and front left door frame (42) from support plate (38) and piping frame assembly (40). Discard nuts.



26. Remove three capscrews (9), three self-locking nuts (2), three shims (41), and six flat washers (3) from slotted holes of support plate (38) and piping frame assembly (40). Discard nuts.

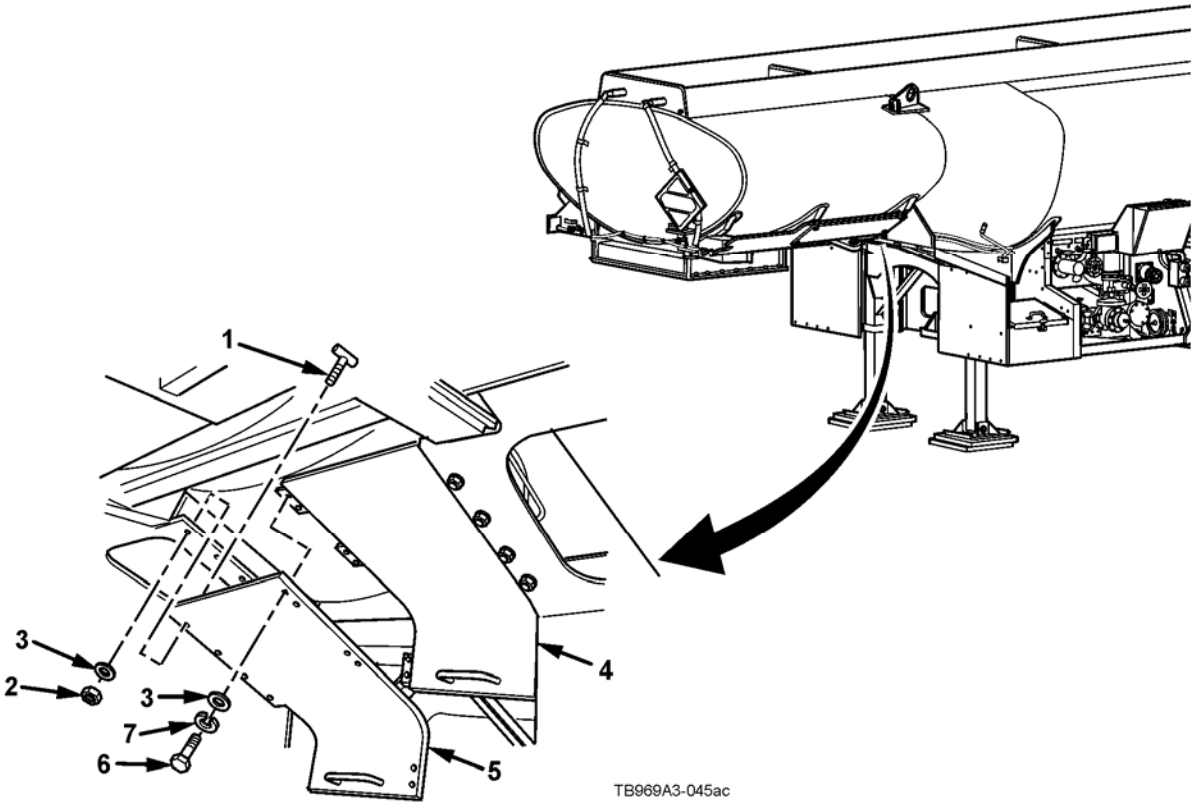
27. Remove two capscrews (9), two self-locking nuts (2), four flat washers (3), and support plate (38) from crossmember (39). Discard nuts.



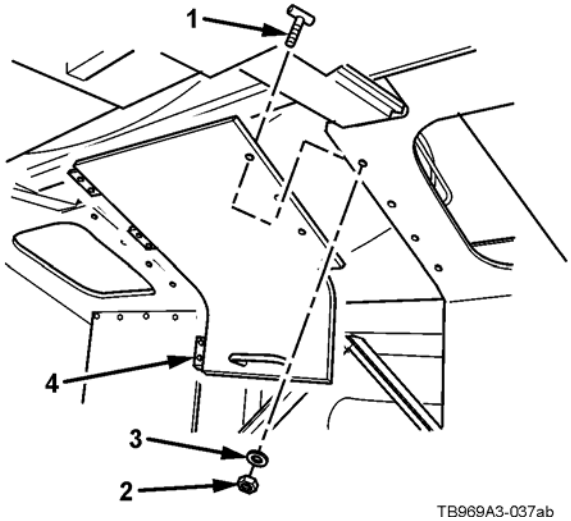
REMOVAL/REPLACEMENT (continued)

28. Remove six capscrews (6), six lockwashers (7), and six flat washers (3) from belly panel (5) and belly panel (4). Discard lockwashers.

29. Remove four T-bolts (1), four flat washers (3), four self-locking nuts (2), and belly panel (5) from semitrailer. Discard nuts.



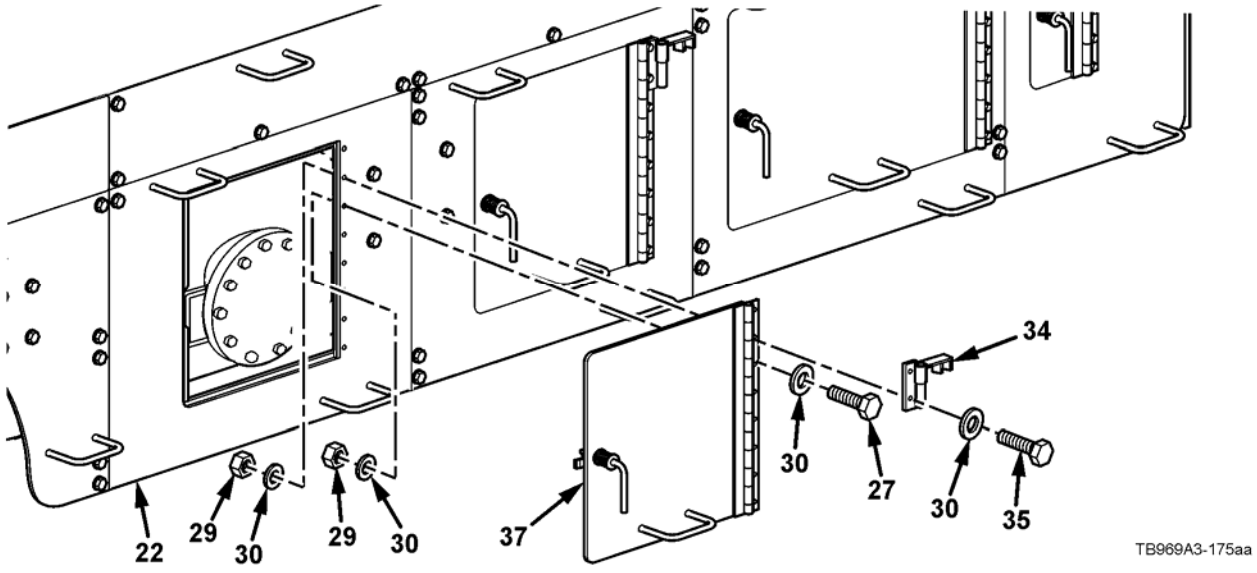
30. Remove four T-bolts (1), four flat washers (3), four self-locking nuts (2), and belly panel (4) from semitrailer. Discard nuts.



REMOVAL/REPLACEMENT (continued)

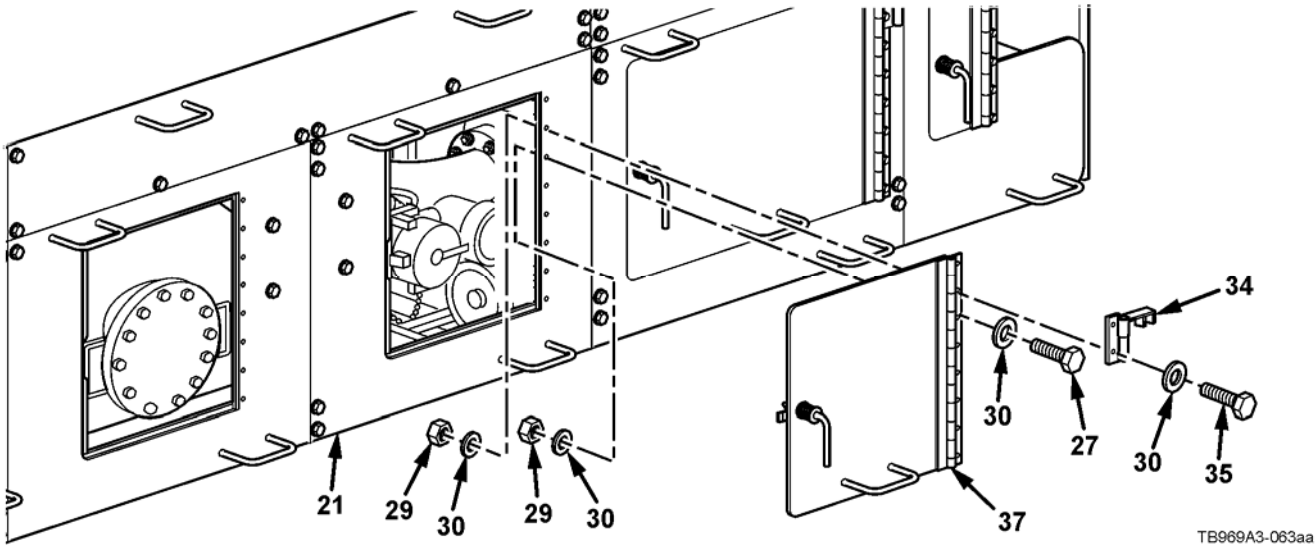
31. Remove two capscrews (35), two self-locking nuts (29), four flat washers (30), and safety latch (34) from door assembly C (37) and filter panel E (22). Discard nuts.

32. Remove six capscrews (27), six self-locking nuts (29), twelve flat washers (30), and door assembly C (37) from filter panel E (22). Discard nuts.



33. Remove two capscrews (35), two self-locking nuts (29), four flat washers (30), and safety latch (34) from door assembly C (37) and front panel C (21). Discard nuts.

34. Remove six capscrews (27), six self-locking nuts (29), twelve flat washers (30), and assembly door C (37) from front panel C (21). Discard nuts.

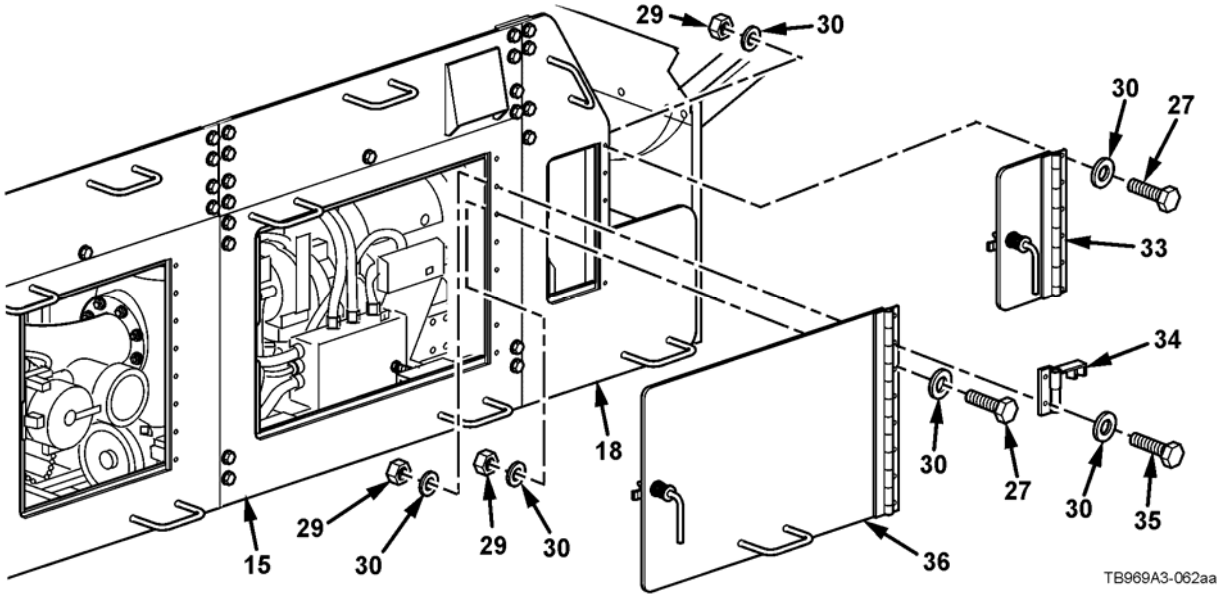


REMOVAL/REPLACEMENT (continued)

35. Remove two capscrews (35), two self-locking nuts (29), four flat washers (30), and safety latch (34) from door assembly B (36) and front panel B (15). Discard nuts.

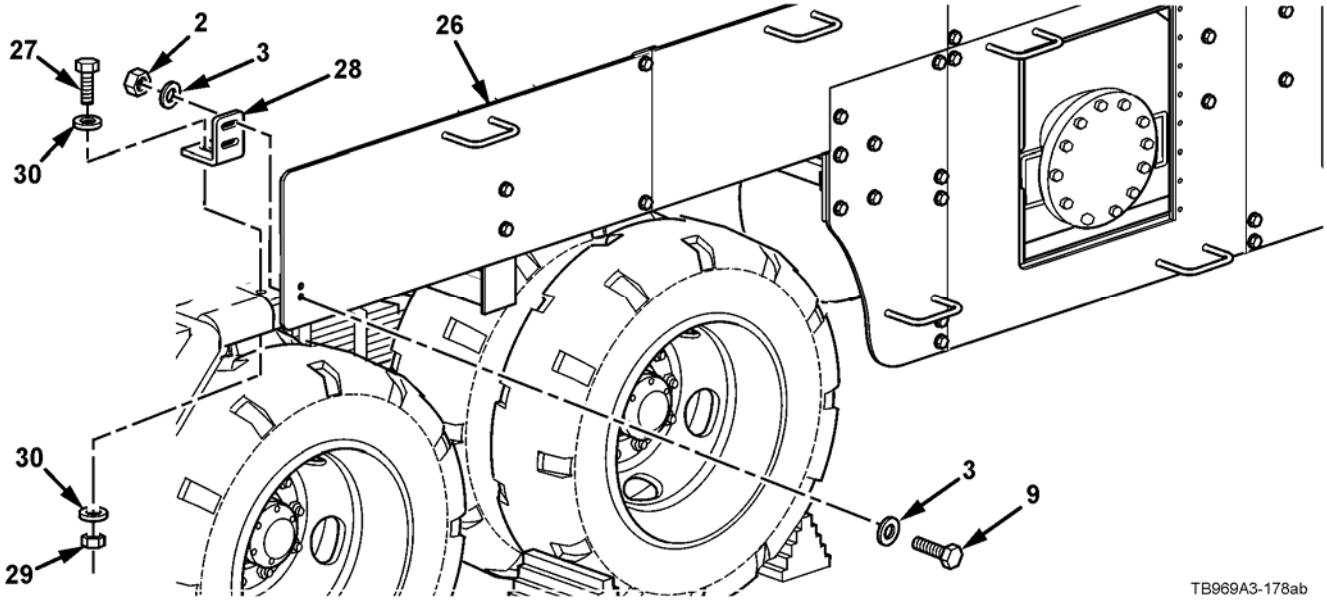
36. Remove six capscrews (27), six self-locking nuts (29), twelve flat washers (30), and door assembly B (41) from front panel B (19). Discard nuts.

37. Remove six capscrews (27), six self-locking nuts (29), twelve flat washers (30), and door assembly A (33) from front panel A (18). Discard nuts.



38. Remove two capscrews (27), two self-locking nuts (29), four flat washers (30), and rear fender panel bracket (28) from rear fender. Discard nuts.

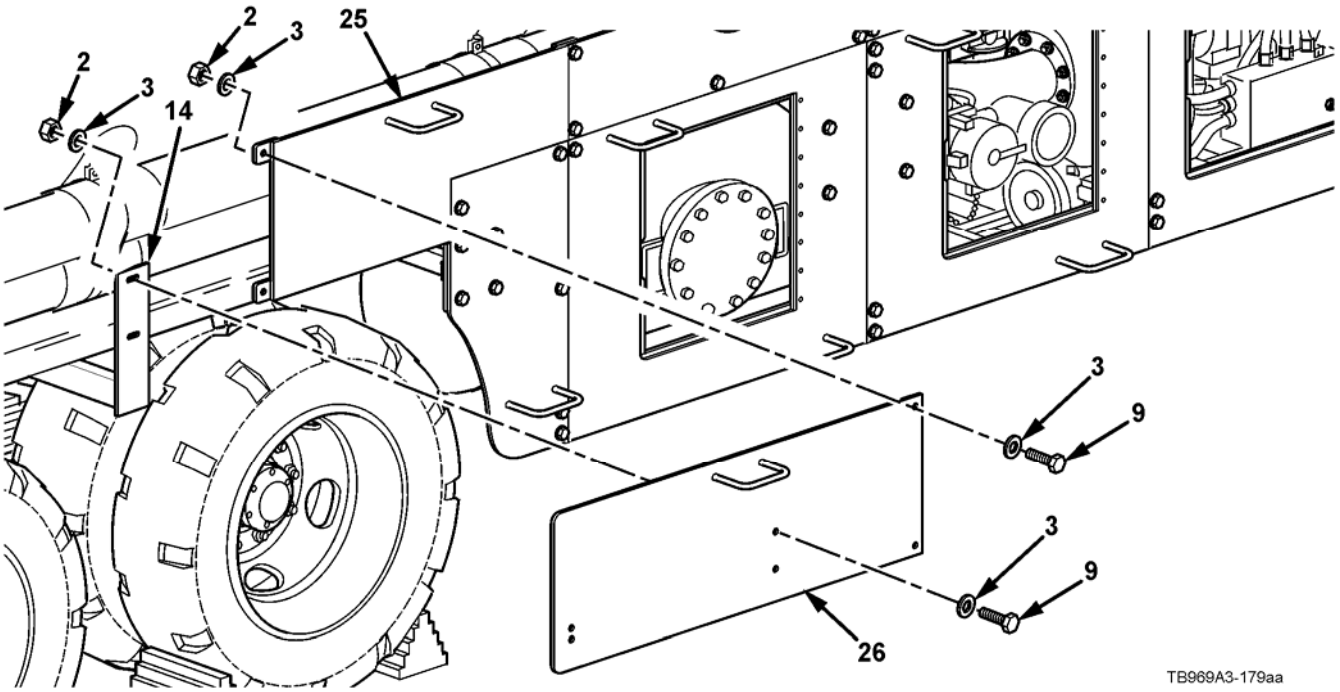
39. Remove two capscrews (9), two self-locking nuts (2), four flat washers (3), and rear fender panel bracket (34) from rear fender panel (26). Discard nuts.



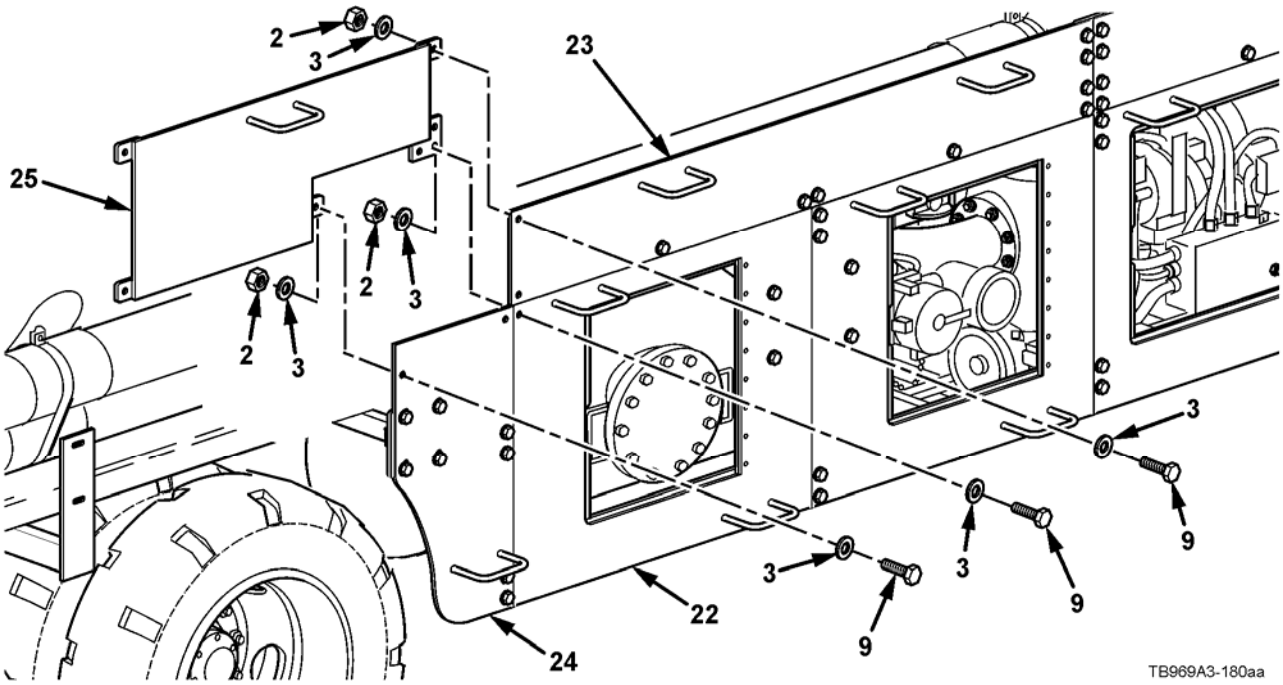
REMOVAL/REPLACEMENT (continued)

40. Remove two capscrews (9), two self-locking nuts (2), four flat washers (3), and rear fender panel (26) from fender bracket (14). Discard nuts.

41. Remove two capscrews (9), two self-locking nuts (2), four flat washers (3), and rear fender panel (26) from center fender panel (25). Discard nuts.

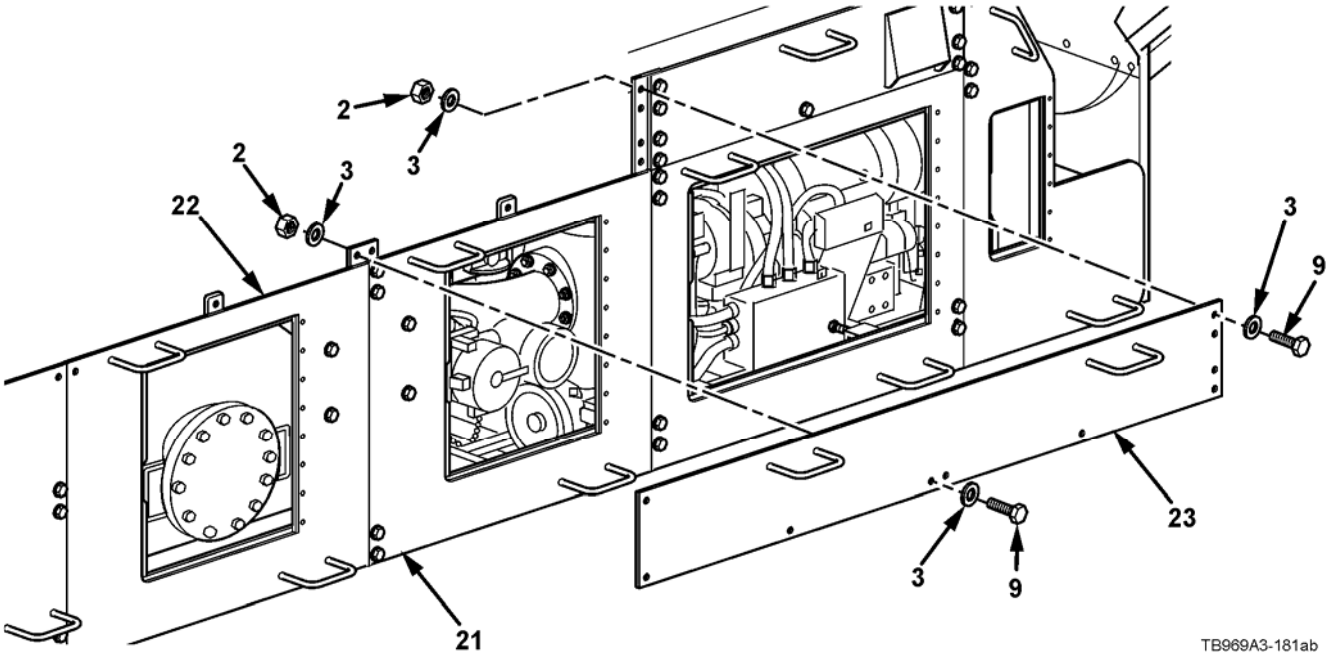


42. Remove five capscrews (9), five self-locking nuts (2), ten flat washers (3), and center fender panel (25) from filter center panel (24), filter panel E (22), and front fender panel (23). Discard nuts.

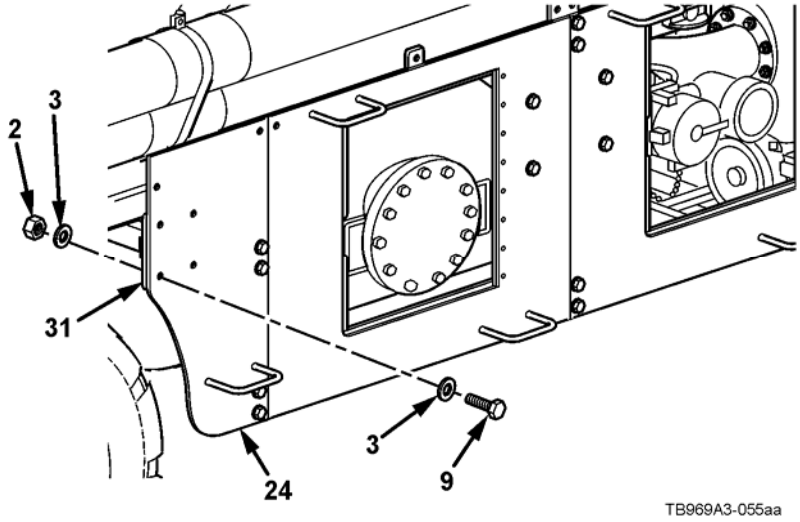


REMOVAL/REPLACEMENT (continued)

43. Remove eight capscrews (9), eight self-locking nuts (2), sixteen flat washers (3), and front fender panel (23) from front panel C (21) and filter panel E (22). Discard nuts.

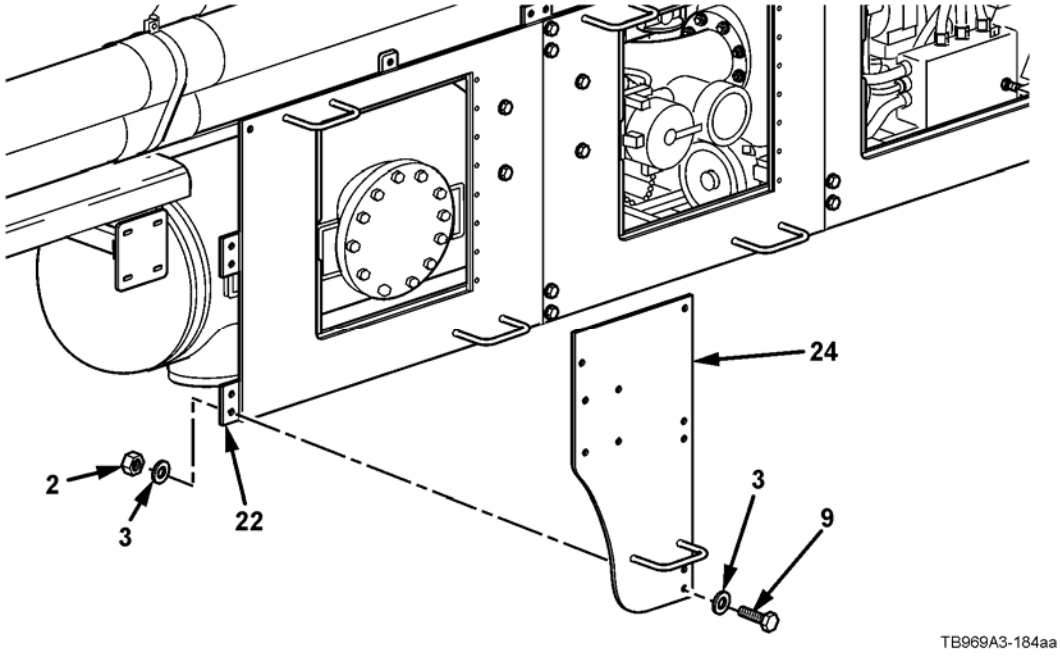


44. Remove four capscrews (9), four self-locking nuts (2), eight flat washers (3), and filter center panel (24) from bracket B center brace (31). Discard nuts.



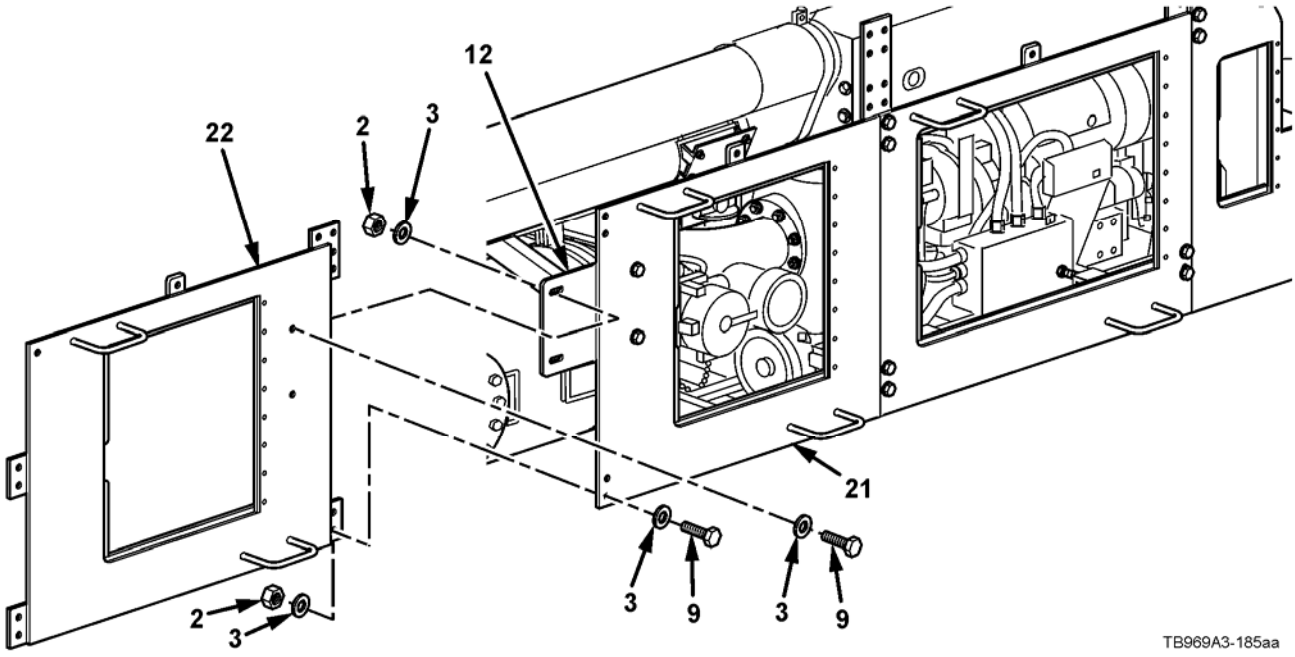
REMOVAL/REPLACEMENT (continued)

45. Remove four capscrews (9), four self-locking nuts (2), eight flat washers (3), and filter center panel (24) from filter panel E (22). Discard nuts.



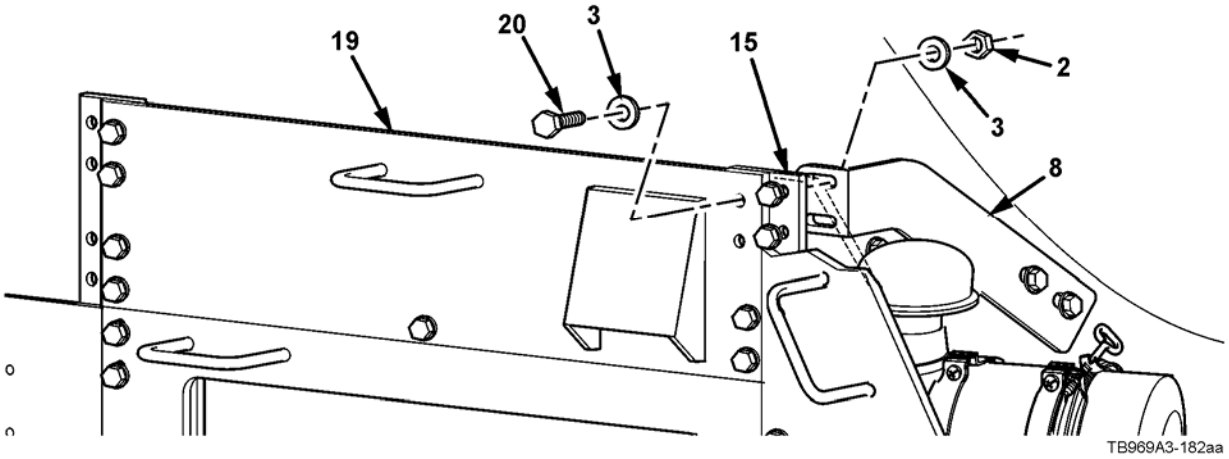
46. Remove two capscrews (9), two self-locking nuts (2), four flat washers (3), and filter panel E (22) from rib bracket A center brace (12). Discard nuts.

47. Remove four capscrews (9), four self-locking nuts (2), eight flat washers (3), and filter panel E (22) from front panel C (21). Discard nuts.

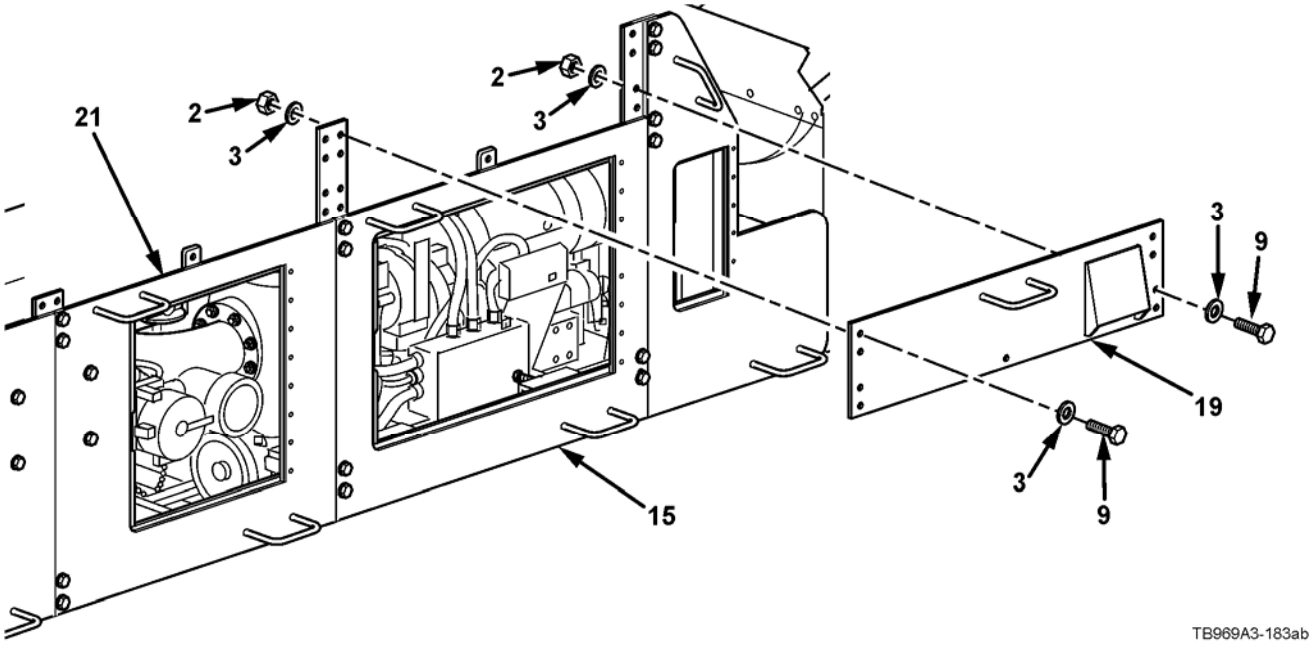


REMOVAL/REPLACEMENT (continued)

48. Remove two capscrews (20), two self-locking nuts (2), four flat washers (3), and front panel D (19) from end front bracket (8). Discard nuts.



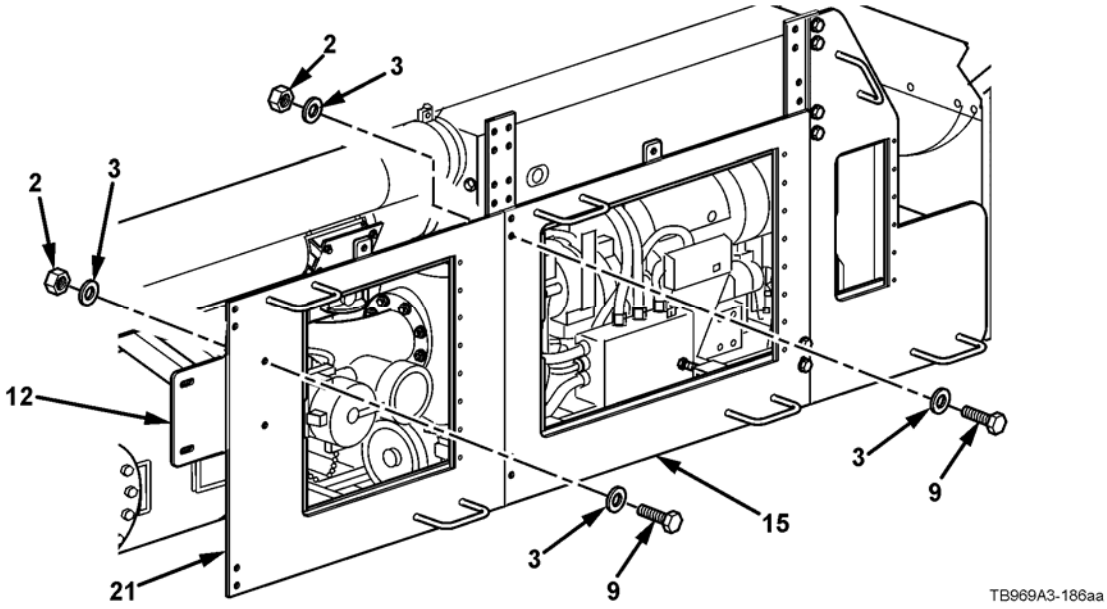
49. Remove seven capscrews (9), seven self-locking nuts (2), fourteen flat washers (3), and front panel D (19) from front panel C (21) and front panel B (15). Discard nuts.



REMOVAL/REPLACEMENT (continued)

50. Remove two capscrews (9), two self-locking nuts (2), four flat washers (3), and front panel C (21) from rib bracket A center brace (12). Discard nuts.

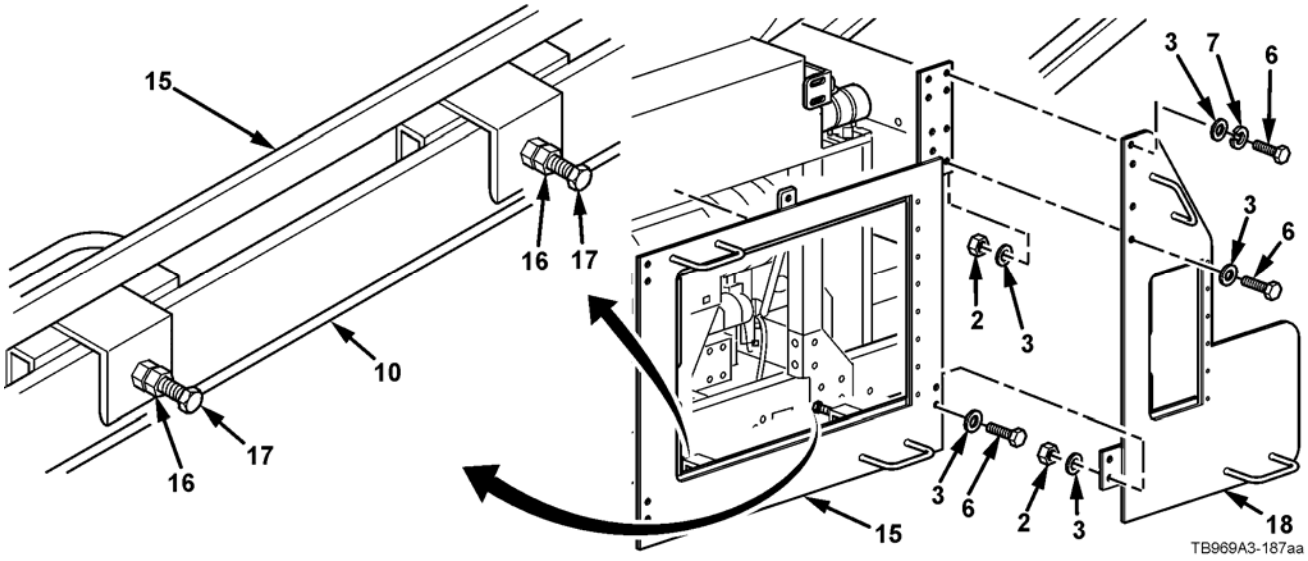
51. Remove four capscrews (9), four self-locking nuts (2), eight flat washers (3), and front panel C (21) from front panel B (15). Discard nuts.



52. Remove two capscrews (6), two lockwashers (7), two flat washers (3), and front panel A (18) from front panel B (15). Discard lockwashers.

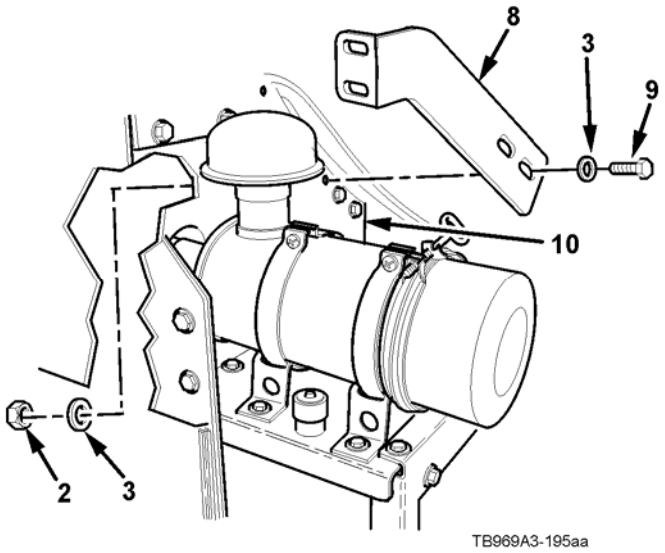
53. Remove four capscrews (9), four self-locking nuts (2), eight flat washers (3), and front panel A (18) from front panel B (15) and engine compartment shroud (10). Discard nuts.

54. Loosen two capscrews (17), two jam nuts (16), and remove front panel B (15) from engine compartment shroud (10).

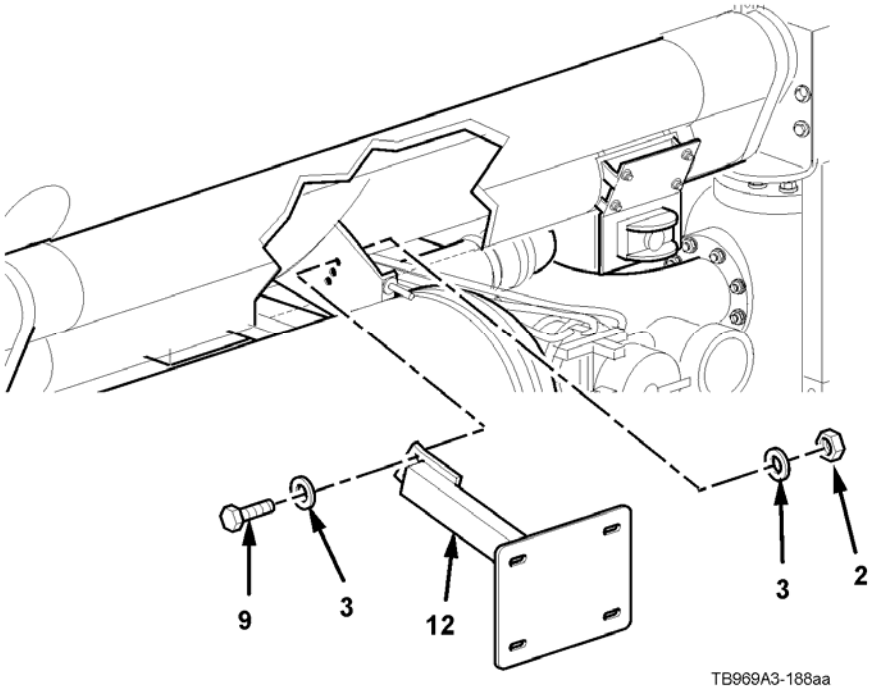


REMOVAL/REPLACEMENT (continued)

55. Remove two capscrews (9), two self-locking nuts (2), four flat washers (3), and front bracket (8) from engine compartment shroud (10). Discard nuts.

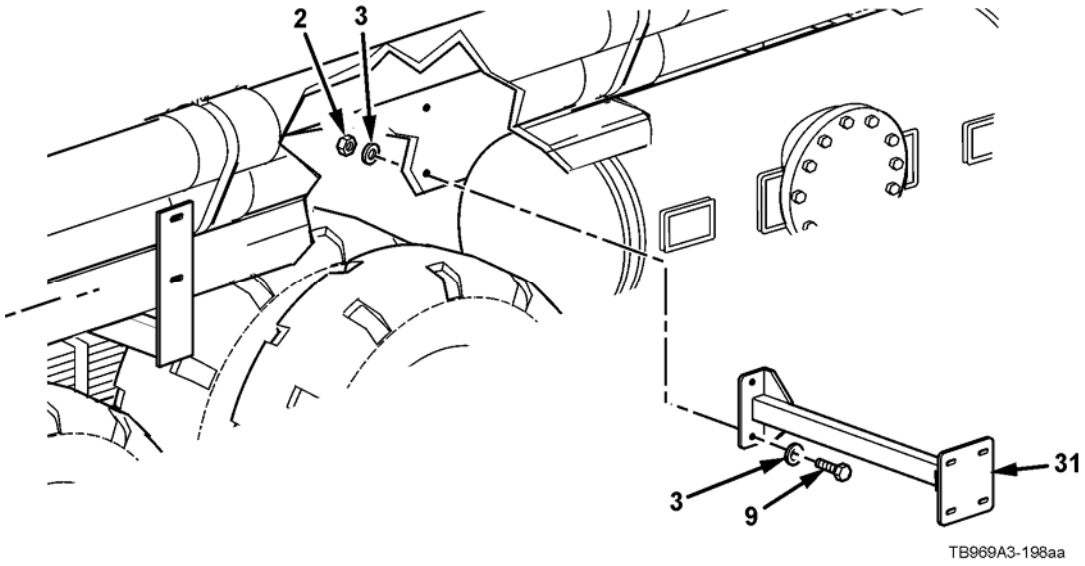


56. Remove three capscrews (9), three self-locking nuts (2), six flat washers (3), and rib bracket A center brace (12) from crossmember. Discard nuts.

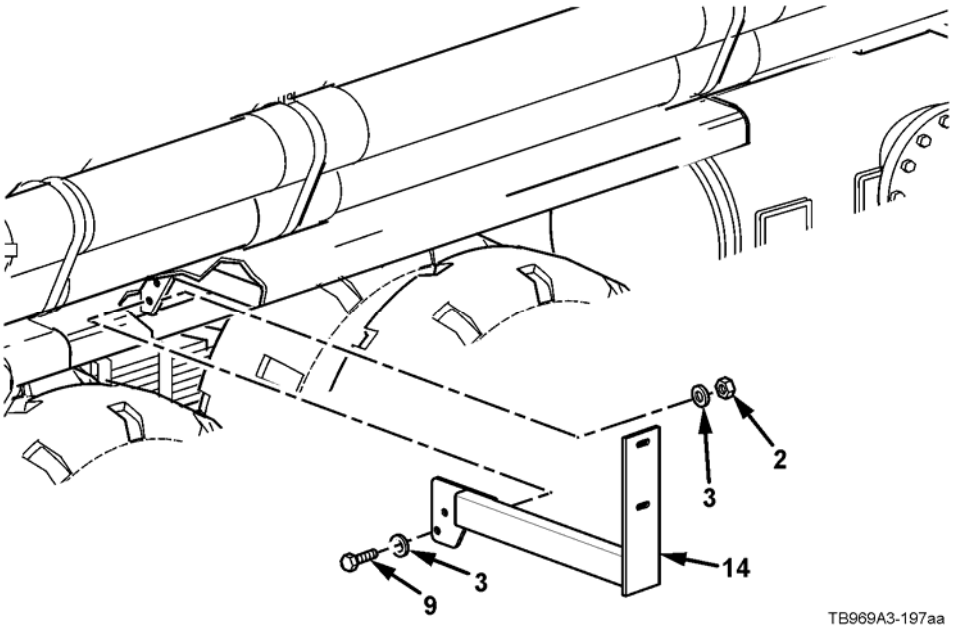


REMOVAL/REPLACEMENT (continued)

57. Remove two capscrews (9), two self-locking nuts (2), four flat washers (3), and bracket B center brace (31) from vehicle frame. Discard nuts.



58. Remove two capscrews (9), two self-locking nuts (2), four flat washers (3), and fender bracket (14) from crossmember. Discard nuts.

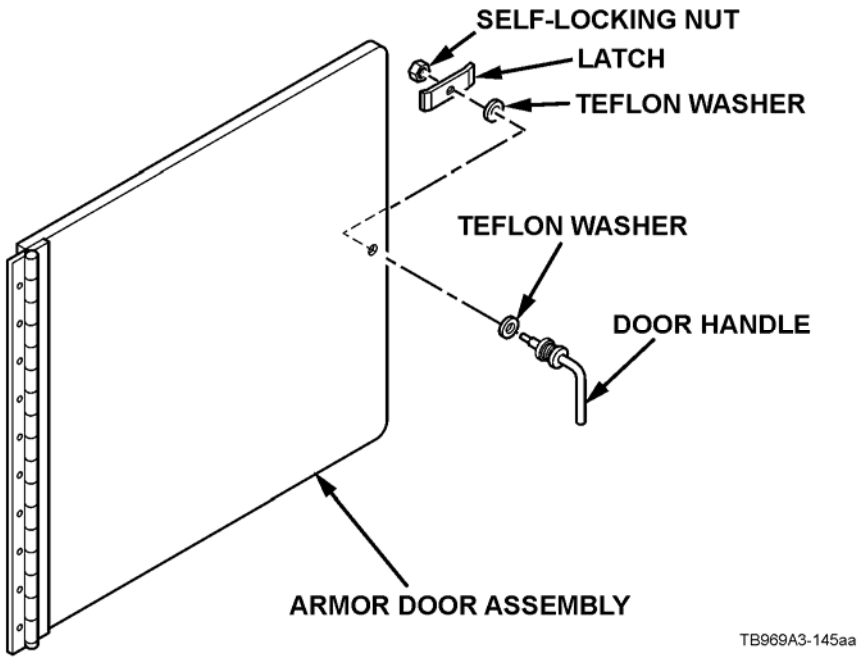


REMOVAL/REPLACEMENT (continued)

NOTE

Perform Step 59 to replace the door handle on all roadside and curbside door assemblies.

59. Remove self-locking nut, latch, door handle, and two Teflon washers from door assembly. Discard washers and nut.



CHAPTER 5
FUEL TANK SELF-SEALING (FTSS) REPAIR KIT

SCOPE

This chapter provides the kit contents and instructions for repairing a fuel tanker that has been coated with the Fuel Tank Self-Sealing (FTSS) System. The FTSS Repair Kit is used to close punctures in the tanker wall that the FTSS System does not fully seal after being ruptured. Each of the 3 and 5-inch diameter Field Repair Patch (FRP) assemblies contain an absorbent packet that will activate a gelatin process, which converts the leaking fuel into a semi-solid. The combination of the semi-solid and mechanical rubber seal of the patch form a blockage of the leaking fuel from the tanker.

FTSS REPAIR KIT

The FTSS Repair Kit consists of the following items listed in Table 5-1:

Table 5-1. FTSS Repair Kit Contents List - 57K4786

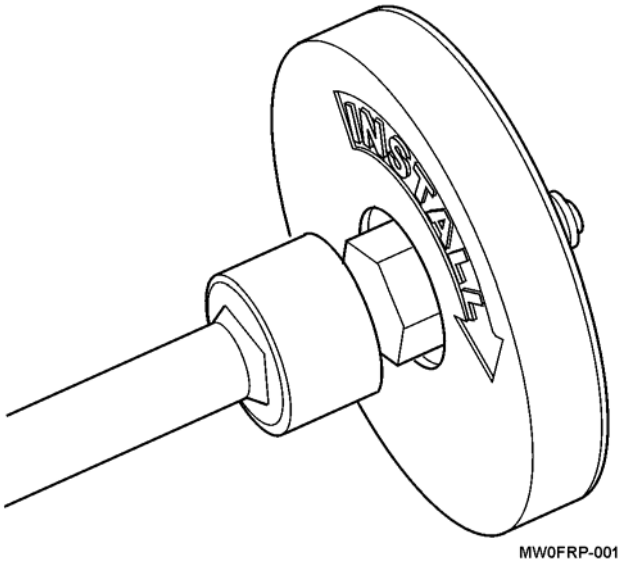
Nomenclature	NSN	Part Number	CAGE	QTY
3-inch Patch, Spill Control	TBD	14287	31902	15 each
5-inch Patch, Spill Control	TBD	14286	31902	5 each
Adhesive, 3 oz Tube	8030-01-293-8513	051135-05203	0FRU4	2 each
Bag, Tool	TBD	2608-VSE	79623	1 each
Battery, Non-Rechargeable, AA 4-Pack	6135-01-447-0950	115A	80204	1 pkg.
Blade, Knife	5110-00-293-2865	PD5110-00-293-2865	80244	1 pkg.
Cloth, Cleaning 80 Count Alcohol Saturated	7920-01-036-4464	TX1301	21994	1 box
Extension, Socket Wrench 20-inch Extension 1/2-inch Drive	5120-00-240-8705	516059-6	80020	1 each
Flashlight, AA Battery	6230-00-635-4998	Z21P	77542	1 each
Gloves, Disposable, XL 100 Count Box	8415-01-492-0180	8415-01-492-0180	80244	1 box
Goggles, Industrial	4240-00-052-3776	3336841	45152	2 pair
Handle, Socket Wrench, 18-inch, 1/2-inch Drive	5120-00-249-1071	B107.10M TY1CL3ST1	05047	1 each
Knife, Craftsman's	5110-00-892-5071	PD5110-00-892-5071	80244	1 each
Laminated Instruction Sheet	TBD	12500872	31902	1 each
Laminated Parts List	TBD	12500888	31902	1 each
Socket, Magnetic 3/4-inch, 1/2-inch Drive	TBD	14394	31902	1 each

REPAIR PROCEDURES

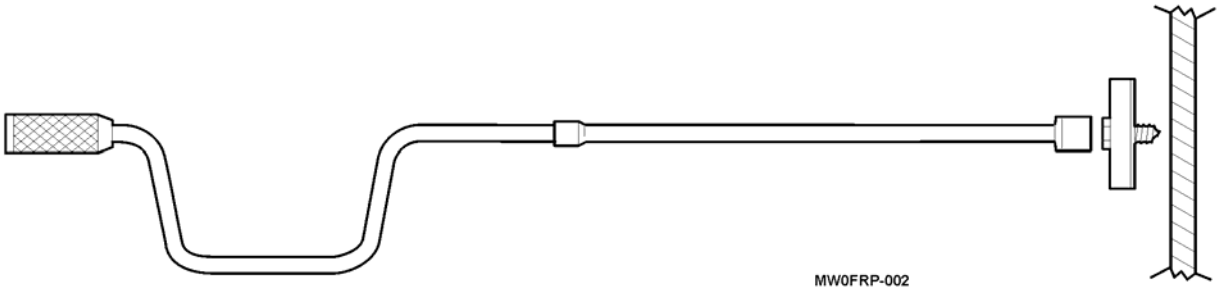
WARNING

- **Fuel is very flammable and can explode easily. To avoid serious injury or death, keep fuel away from open flame or any spark (ignition source). Keep a B-C fire extinguisher within reach when performing fuel tank repair.**
- **Eye and hand protection must be worn at all times when applying FTSS Patch Kit. Failure to do so may result in injury to personnel.**

1. Place the bolt head of the FRP assembly into the magnetic socket.
2. Position the FRP assembly within 1/2-inch (12.7 mm) of the leak by "stabbing" the patch assembly directly into the FTSS System liner.
3. Using the socket wrench handle and extension, tighten the FRP assembly screw until secure.



MW0FRP-001


MW0FRP-002

4. Observe the fuel flow. Leakage should begin to slow and noticeably stop within a few seconds. If the leak continues, remove the patch, and relocate to a different position.
5. After leak has stopped, wipe any excess fuel from repaired area with a clean rag. Clean repaired area with alcohol wipes. Apply adhesive to the base of the FRP assembly to permanently seal the patch in place.
6. Report all fuel tanker vessel damage to immediate supervisor for proper repair.

CHAPTER 6
QUALITY ASSURANCE, FINAL INSPECTION, AND MAINTENANCE AND LUBRICATION REQUIREMENTS

QUALITY ASSURANCE REQUIREMENTS

The installer is responsible for compliance with quality assurance requirements specified herein. The installer is responsible for observing all quality and safety standards. These requirements and the installer's plan of inspection, or quality assurance program, constitute the minimum examinations and tests necessary to assure compliance with established requirements. The installer is responsible for following the instructions contained in this Technical Bulletin (TB) for installing the Tanker Ballistic Protection System (TBPS) kit. Report and record the application of this TB in accordance with DA Pam 750-8 and DA Pam 738-751.

The user is required to follow maintenance and lubrication requirements.

FINAL PAINT

1. Ensure all exposed surfaces have been thoroughly cleaned by an approved chemical or mechanical method.

2. Finish all exposed metal plates, brackets, and shields using rust inhibitor primer and paint as specified in Table 7-4, Materials and Parts, in accordance with TM 43-0139, Painting Instructions for Army Materiel. Allow for the appropriate time for the primer and paint to cure.

3. Ensure all surfaces have been pretreated as soon as possible after cleaning by an approved spray or brush method.

4. Apply stencils per TM 9-2330-330-14&P in accordance with TM 43-0139 and TB 43-0209.

FINAL INSPECTION REQUIREMENTS

1. Check all armor panels, braces, brackets, and doors are properly installed and secure.

2. Check the operation of all access doors. Ensure access doors do not bind when opening and closing.

3. Ensure door latches do not bind and hold access doors securely in place.

4. Ensure that TB 9-2330-330-14&P-1 is in accessories stowage box.

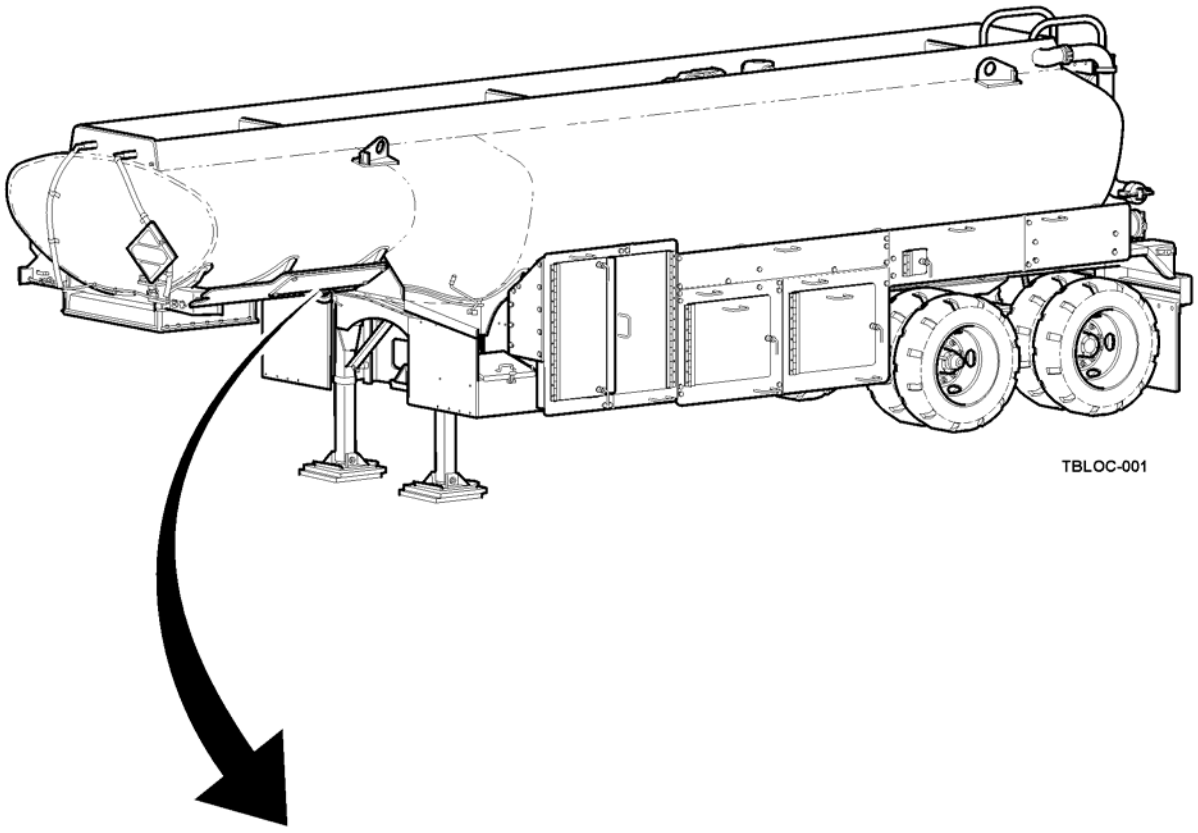
MAINTENANCE AND LUBRICATION REQUIREMENTS

1. Ensure door hinges, safety latches, and door handles are lubricated weekly using lubricating oil (Item 9, Table 7-4).

2. Ensure hexagon head capscrews and self-locking nuts are properly torqued monthly.

MARKING EQUIPMENT

After the TBPS has been installed, apply the new data plate next to the existing vehicle data plate, as shown.



UP-ARMORED VEHICLE	
MODEL :	FIELD A :
NSN :	FIELD B :
NEW LIN :	FIELD C :
OLD LIN :	FIELD D :

TB969A3-144aa

CHAPTER 7
SUPPORT DATA

Section 1. References
Section 2. Special Tools; Tool Kits; Templates; Test, Measurement, and Diagnostic Equipment (TMDE); and Fixtures Required
Section 3. Materials and Expendables
Section 4. Repair Parts and Special Tools List (RPSTL)

SECTION 1. REFERENCES

This section contains a list of all the publications referenced in and/or applicable to this TB.

DA PAM 750-8	The Army Maintenance Management System (TAMMS) Users Manual
DA PAM 738-751	Functional User's Manual for The Army Maintenance Management System – Aviation (TAMMS-A)
DA Form 2028-2	Recommended Changes to Equipment Technical Publications
FM 4-25-11	First Aid For Soldiers
SF 368	Product Quality Deficiency Report
TB 43-0209	Color and marking of Military Vehicles, Construction Equipment, and Materials Handling Equipment
TM 38-470	Storage and Maintenance of Army Prepositioned Stock Material
TM 43-0139	Painting Instructions for Army Materiel
TM 750-244-6	Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use
TM 9-2330-330-14&P	Unit, Direct Support, and General Support Maintenance Repair Parts and Special Tools List for Semitrailer, Fuel Tanker, 5000-Gallon, Fuel Dispensing, Automotive, M969A3

SECTION 2. SPECIAL TOOLS, TOOL KITS; TEMPLATES; TMDE; AND FIXTURES REQUIRED

The following list contains the common and special tools needed to properly install the AOA kit:

Table 7-1. Hand Tools

Nomenclature	National Stock Number	Part Number	CAGE	QTY
Tool Kit, General Mechanics	5180-00-177-7033 or Commercial Equivalent	SC5180-90-CL-N26	19204	1
Variable Speed Magnetic Base Drill	Milwaukee or Commercial Equivalent	CAT 4202 40917, Model 8373877778 42010	40898	1
Hand Grinder	Dewalt or Commercial Equivalent	DW818	103EB	1
C Clamps, 8-inch	5120-00-203-6436	5027A16	2V507	3
C Clamps, 12-inch	McMaster Carr or Commercial Equivalent	5027A25	2V507	2
Vise Grip Clamps, 8-inch	McMaster Carr or Commercial Equivalent	5105A17	24507	4
Vise Grip Clamps, 4-1/2-inch	McMaster Carr or Commercial Equivalent	5105A23	24507	4
Pads, Grinding 4-inch	McMaster Carr or Commercial Equivalent	4655A5	2V507	2
Grinding Discs 4-1/2-inch (Package of 25)	McMaster Carr or Commercial Equivalent	4732A12	2V507	2
Torque Wrench, 1/2-inch drive	5120-00-640-6364	B107.14MTY1CLBS11	05047	1
Splitter, Nut, Huck Bolt	McMaster Carr or Commercial Equivalent	3843A15	2V507	1

Table 7-2. Common and Special Tools

Nomenclature	National Stock Number	Part Number	CAGE	QTY
Drill Bits, 19/32 (.594) Diameter Ex Gold Cobalt, Split Point	MCS International or Commercial Equivalent	78581055	4J007	6
Work Lights	Northern Tool or Commercial Equivalent	160923-1405	1LLb3	2
Electrical Extension Lines, 50-Foot	McMaster Carr or Commercial Equivalent	162439-1405	2V507	4
Gloves, Work, Leather	McMaster Carr or Commercial Equivalent	52835T41	2V507	8
3/8 Air Hose, 65-Feet	MCS International or Commercial Equivalent	1586652-1405	4J007	4

SECTION 3. MATERIALS AND EXPENDABLES

The following list contains the bulk and expendable materials needed to apply the TB:

Table 7-3. Materials and Parts

ITEM	Nomenclature	National Stock Number	Part Number	CAGE	QTY
1	Primer, Coating (Rust Inhibitor)	8010-00-687-8191 or Commercial Equivalent	TT-P-662	81348	1 GL
2	Cutting Fluid	9150-01-373-5788 or Commercial Equivalent	TAPMAGIC EP-XTRA	17781	1 PT
3	Cleaning Compound, Solvent	7930-00-177-5217 or Commercial Equivalent	7930-00-177-5217	80244	5 GL
4	Detergent, General Purpose	7930-00-985-6945 or Commercial Equivalent	7930-00-985-6945	83421	1 GL
5	Coating, Water Dispersible Aliphatic Polyurethane, Chemical Agent Resistant (Desert Tan 686A)	8010-01-519-6769 or Commercial Equivalent	M64159-2-003G-33446	81349	3 GL
6	Oil, Lubricating	9150-00-178-4726	MIL-PRF-2104	81348	1 QT

SECTION 4. REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)

INTRODUCTION

1. SCOPE.

This Repair Parts and Special Tools List (RPSTL) lists and authorizes spares and repair parts required for performance of Field level maintenance of the Semitrailer, Tank, Fuel, 5000-Gallon M969A3P1 Tanker Ballistic Protection System/Add-On-Armor/Fuel Tank Self-Sealing System (TBPS/AOA/FTSS). It authorizes the requisitioning, issue, and disposition of spares and repair parts as indicated by the Source, Maintenance, and Recoverability (SMR) codes.

2. GENERAL

In addition to the Introduction, this RPSTL is divided into the following sections:

a. Section II. Repair Parts List. A list of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. This list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Repair parts kits are listed separately in their own functional group. Items listed are shown on the associated illustrations.

b. Section III. Special Tools List. There are no special tools for the M969A3P1 TBPS.

c. Section IV. Cross-Reference Indexes. There are two cross-reference indexes in this RPSTL: National Stock Number Index and Part Number Index.

3. EXPLANATION OF COLUMNS (SECTIONS II AND III)

a. Item No. (Column 1). Indicates the number used to identify items called out in the illustration.

b. SMR Code (Column 2). The SMR code contains supply/requisitioning information, maintenance level authorization criteria, and disposition instruction, as shown in the following breakout:

Source Code	**Maintenance Code**		**Recoverability Code**	**Demilitarization Code**
xx	x	x	x	x
1st two positions: How to get an item.	3rd position: Who can install, replace, or use an item.	4th position: Who can complete repair* on the item.	5th position: Who determines disposition action items on unserviceable items.	6th position: Method and degree of demilitarizing items when required.

**Complete Repair:* Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the *"Repair"* function in a use/user environment in order to restore serviceability to a failed item.

3. EXPLANATION OF COLUMNS (SECTIONS II AND III) (continued)

(1) Source Code. The source code tells you how to get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follow:

Code	*Application/Explanation*
PA PB PC PD PE PF PG	Stocked items; use the applicable NSN to request/requisition items with these source codes. They are authorized to the maintenance category indicated by the code entered in the third position of the SMR code. *Items coded PC are subject to deterioration.*
KD KF KB	Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance level indicated in the third position of the SMR code. The complete kit must be requisitioned and applied.
MO - Made at Unit/AVUM level MF - Made at DS/AVIM Level MH - Made at GS Level ML - Made at SRA MD - Made at Depot	Items with these codes are not to be requested/requisitioned individually. They must be made from bulk materiel which is identified by the part number in the DESCRIPTION AND USABLE ON CODE (UOC) column and listed in the bulk materiel functional group of the RPSTL. If the item is authorized to you by the third position of the SMR code, but the source code indicates it is made at a higher level, order the item from the higher level of maintenance.
AO - Assembled by Unit/ AVUM level AF - Assembled by DS/ AVIM level AH - Assembled by GS level AL - Assembled by SRA AD - Assembled by Depot	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the third position of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher level, order the item from the higher level of maintenance.
XA	Do not requisition an “XA” coded item. Order the next higher assembly. (Refer to NOTE on the following page).
XB	If an item is not available from salvage, order it using the CAGEC and P/N.
XC	Installation drawings, diagrams, instruction sheets, field service drawings; identified by manufacturer’s P/N.
XD	Item is not stocked. Order an XD-coded item through normal supply channels using the CAGEC and P/N given, if no NSN is available.

3. EXPLANATION OF COLUMNS (SECTIONS II AND III) (continued)

NOTE

Cannibalization of controlled exchange, when authorized, may be used as a source of supply for items with the above source codes, except for those source coded "XA" or those aircraft support items restricted by requirements of AR 750-1.

(2) Maintenance Code. Maintenance codes tell you the level(s) of maintenance authorized to use and repair support items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

(a) Third Position. The maintenance code entered in the third position tells you the lowest maintenance level authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to one of the following levels of maintenance:

Code	Application/Explanation
C	Crew or Operator maintenance done within Field/AVUM maintenance.
O	Unit Level/AVUM maintenance can remove, replace, and use the item.
F	Direct Support/AVIM maintenance can remove, replace, and use the item.
H	General Support maintenance can remove, replace, and use the item.
L	Specialized Repair Activity (SRA) can remove, replace, and use the item.
D	Depot Maintenance can remove, replace, and use the item.

(b) Fourth Position. The maintenance code entered in the fourth position tells you whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to do complete repair (perform all authorized repair functions).

NOTE

Some limited repair may be done on the item at a lower level of maintenance, if authorized by the SMR codes.

Code	Application/Explanation
O	Unit/AVUM is the lowest level that can do complete repair of the item.
F	Direct Support/AVIM is the lowest level that can do complete repair of the item.
H	General Support is the lowest level that can do complete repair of the item.
L	Specialized Repair Activity (SRA) is the lowest level that can do complete repair of the item.
D	Depot is the lowest level that can do complete repair of the item.
Z	Nonreparable. No repair is authorized.
B	No repair is authorized. No parts or special tools are authorized for the maintenance of a "B"-coded item. However, the item may be reconditioned by adjusting, lubricating, etc., at the user level.

3. EXPLANATION OF COLUMNS (SECTIONS II AND III) (continued)

(3) Recoverability Code. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the SMR code as follows:

Code	Application/Explanation
Z	Nonreparable Item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the third position of the SMR code.
O	Reparable Item. When uneconomically reparable, condemn and dispose the item at the Unit level maintenance.
F.	Reparable Item. When uneconomically reparable, condemn and dispose of the item at Direct Support level.
H	Reparable Item. When uneconomically reparable, condemn and dispose of the item at General Support level.
D	Reparable Item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item are not authorized below depot level.
L	Reparable Item. Condemnation and disposal of item not authorized below Specialized Repair Activity (SRA).
A	item requires special handling or condemnation procedures because of specific reasons (e.g., precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.

(4) Demilitarization Code. Demilitarization codes are assigned to items to indicate the method and degree of demilitarization required. The demilitarization code is entered in the sixth position of the SMR code as follows:

Code	Application/Explanation
A	No demilitarization required.
B	MLI, No demilitarization required.
C	MLI, removed deadly parts in accordance with DOD 4160.21-M-1.
D	MLI, mutilate.
E	MLI, burn, shred or pulp.
F	MLI, contact the item manager.
G	MLI, demil required prior to DRMO.
P	MLI, security classified, demilitarize sensitive markings prior to transfer to DRMO. Not used on AEDA items.
Q	SLI, mutilate to preclude normal use, OCONUS only.

3. EXPLANATION OF COLUMNS (SECTIONS II AND III) (continued)

c. NSN - (Column 3). The NSN for the item is listed in this column.

d. CAGEC (Column 4). The Commercial and Government Entity Code (CAGEC) is a five-digit code which is used to identify the manufacturer, distributor, or Government agency/activity that supplies the item.

e. PART NUMBER (Column 5). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When you use an NSN to requisition an item, the item you receive may have a different part number from the part ordered.

f. DESCRIPTION AND USABLE ON CODE (UOC) (Column 6). This column includes the following information:

(1) The Federal item name and, when required, a minimum description to identify the item.

(2) Part Numbers (P/Ns) of bulk materials are referenced in this column in the line entry to be manufactured or fabricated.

(3) Hardness Critical Item (HCI). A support item that provides the equipment with special protection from electromagnetic pulse (EMP) damage during a nuclear attack.

(4) The statement END OF FIGURE appears just below the last item description in column (6) for a given figure in both the repair parts list and special tools list functional groups.

g. QTY (Column 7). The QTY (quantity per figure) column indicates the quantity of the item used in the breakout shown on the illustration/figure, which is prepared for a functional group, subfunctional group, group or an assembly. A “V” appearing in this column in lieu of a quantity indicates that the quantity is variable and the quantity may vary from application to application.

4. EXPLANATION OF CROSS-REFERENCE INDEXES (SECTIONS IV)

a. National Stock Number (NSN) Index

(1) STOCK NUMBER Column. This column lists the NSN by National Item Identification Number (NIIN) sequence. The NIIN consists of the last nine digits of the NSN (i.e., NSN 5305-01-674-1467). When using this column to locate an item, ignore the first four digits of the NSN. However, the complete NSN should be used when ordering items by stock number.

(2) FIG. Column. This column lists the number of the figure where the item is identified/located. The figures are in numerical order in Section II and III.

(3) ITEM Column. The item number identifies the item associated with the figure listed in the adjacent FIG. column. This item is also identified by the NSN listed on the same line.

b. Part Number (P/N) Index. Part numbers in this index are listed in ascending alphanumeric sequence (i.e., vertical arrangement of letter and number combination which places the first letter or digit of each group in order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order).

(1) PART NUMBER Column. Indicates the P/N assigned to the item.

(2) FIG. Column. This column lists the number of the figure where the item is identified/located in the RPSTL list Sections II and III.

(3) ITEM Column. The item number is the number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

5. SPECIAL INFORMATION

a. Usable On Code (UOC). The UOC appears in the lower left corner of the DESCRIPTION column heading. Usable on codes are shown as “UOC:” in the Description Column (justified left) on the first line under the applicable item/nomenclature. Uncoded items are applicable to all models. Identification of the UOC’s used in the RPSTL are:

Code	Used On
AOH	M969A3P1

b. Associated Publication. The publication(s) listed below pertain to the Semitrailer, Tank, Fuel, 5000-Gallon (M969A3).

TM 9-2330-330-14&P	M969A3

6. HOW TO LOCATE REPAIR PARTS

a. When National Stock Number (NSN) is Known:

(1) First. If you have the NSN, look in the STOCK NUMBER column of the NSN index. The NSN is arranged in NIIN sequence. Note the figure and item number next to the NSN.

(2) Second. Turn to the figure and locate the item number. Verify that the item is the one you are looking for.

b. When Part Number (P/N) is Known.

(1) First. If you have the P/N and not the NSN, look in the PART NUMBER column of the P/N index. Identify the figure and item number.

(2) Second. Look up the item on the figure in the applicable repair parts list figure.

7. ABBREVIATIONS

For standard abbreviations see ASME Y14.38-1999, *Abbreviations and Acronyms*.

Abbreviations Explanation

AEDA .....Ammunition, Explosives, and Dangerous Articles
AOA.....Add-On-Armor
AVIM .....Aviation Intermediate Maintenance
AVUM.....Aviation Unit Maintenance
CAGEC .....Commercial and Government Entity Code
DOD .....Department of Defense
DRMO .....Defense Reutilization and Marketing Office
EMP .....Electromagnetic Pulse
FTSS.....Fuel Tanker Self-Sealing
MLI .....Military List Items
NIIN.....National Item Identification Number (consists of the last 9 digits of the NSN)
NSN.....National Stock Number
OCONUS .....Outside Contiguous United States
P/N .....Part Number
RPSTL.....Repair Parts and Special Tools Lists
SLI.....Strategic List Items
SMR .....Source, Maintenance, and Recoverability Code
TBPS.....Tanker Ballistic Protection System

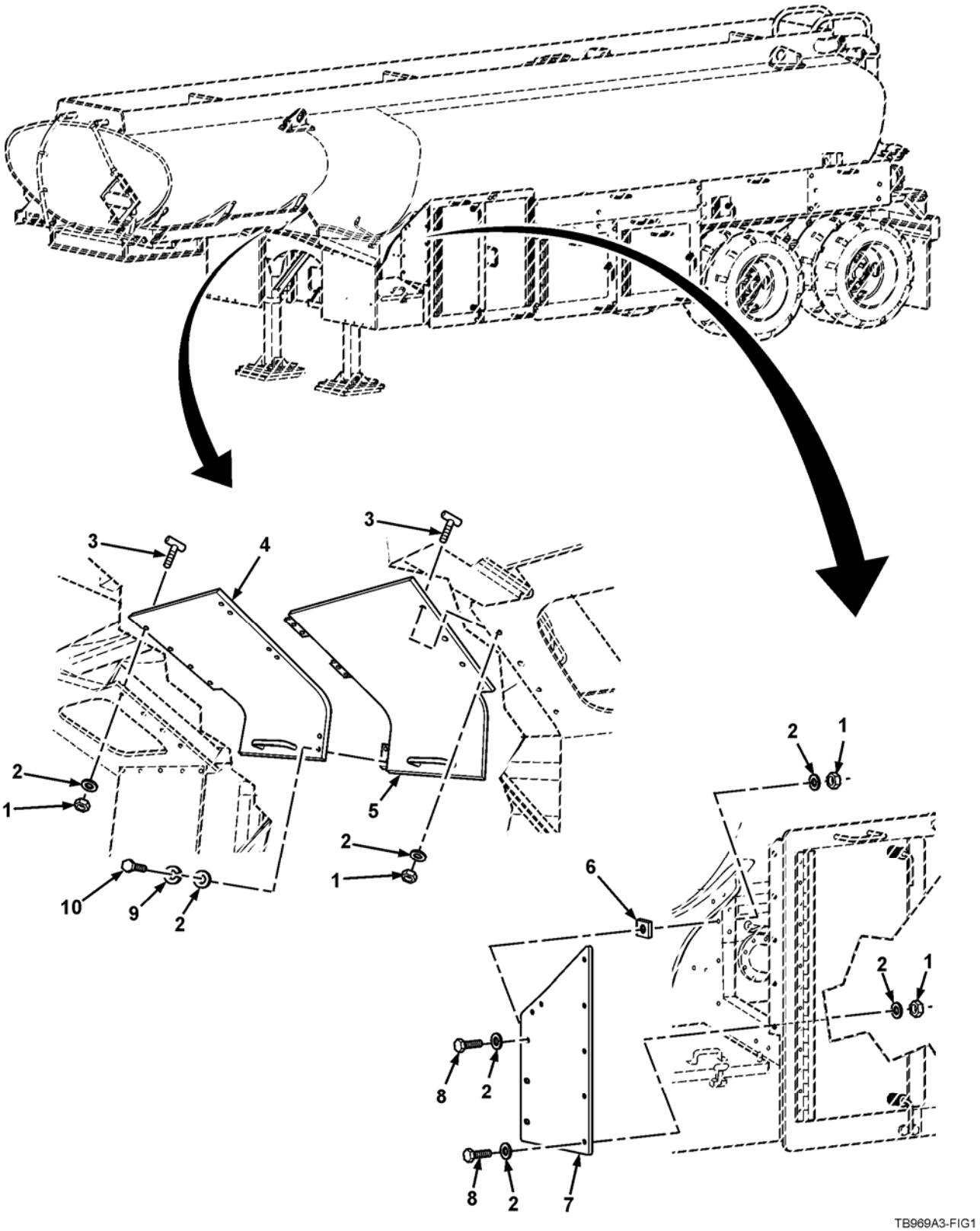


Figure 1. Armor Belly Plates and Roadside Support Plate

(1) ITEM NO	(2) SMR	(3) NSN	(4) CAGE	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 33 SPECIAL PURPOSE KITS GROUP 3307 SPECIAL PURPOSE KITS FIG.1 ARMOR BELLY PLATES AND ROADSIDE SUPPORT PLATE	
1	PAOZZA		96906	M45913/4-8CG8Z	NUT,SELF-LOCKING HE PART OF KIT P/N 57K4844..... UOC:AOH	18
2	PAOZZA	5310-00-787-9425	80205	MS15795-818	WASHER,FLAT PART OF KIT P/N 57K4844. UOC:AOH	34
3	PAOZZA		31902	12502022	T-BOLT PART OF KIT P/N 57K4844..... UOC:AOH	8
4	PBOZZD		31902	12501993	ARMOR,SUPPLEMENTAL PART OF KIT P/N 57K4844..... UOC:AOH	1
5	PBOZZD		31902	12501992	ARMOR,SUPPLEMENTAL PART OF KIT P/N 57K4844..... UOC:AOH	1
6	PAOZZA		31902	12502032	SHIM PART OF KIT P/N 57K4844..... UOC:AOH	3
7	PBOZZD		31902	12501969	SUPPORT PLATE PART OF KIT P/N 57K4844..... UOC:AOH	1
8	PAOZZA	5305-00-071-2070	80204	B1821BH050C175N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	10
9	PAOZZA	5310-00-933-8778	80205	MS35338-143	WASHER,LOCK PART OF KIT P/N 57K4844. UOC:AOH,	6
10	PAOZZA	5305-00-071-2067	80204	B1821BH050C125N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	6

END OF FIGURE

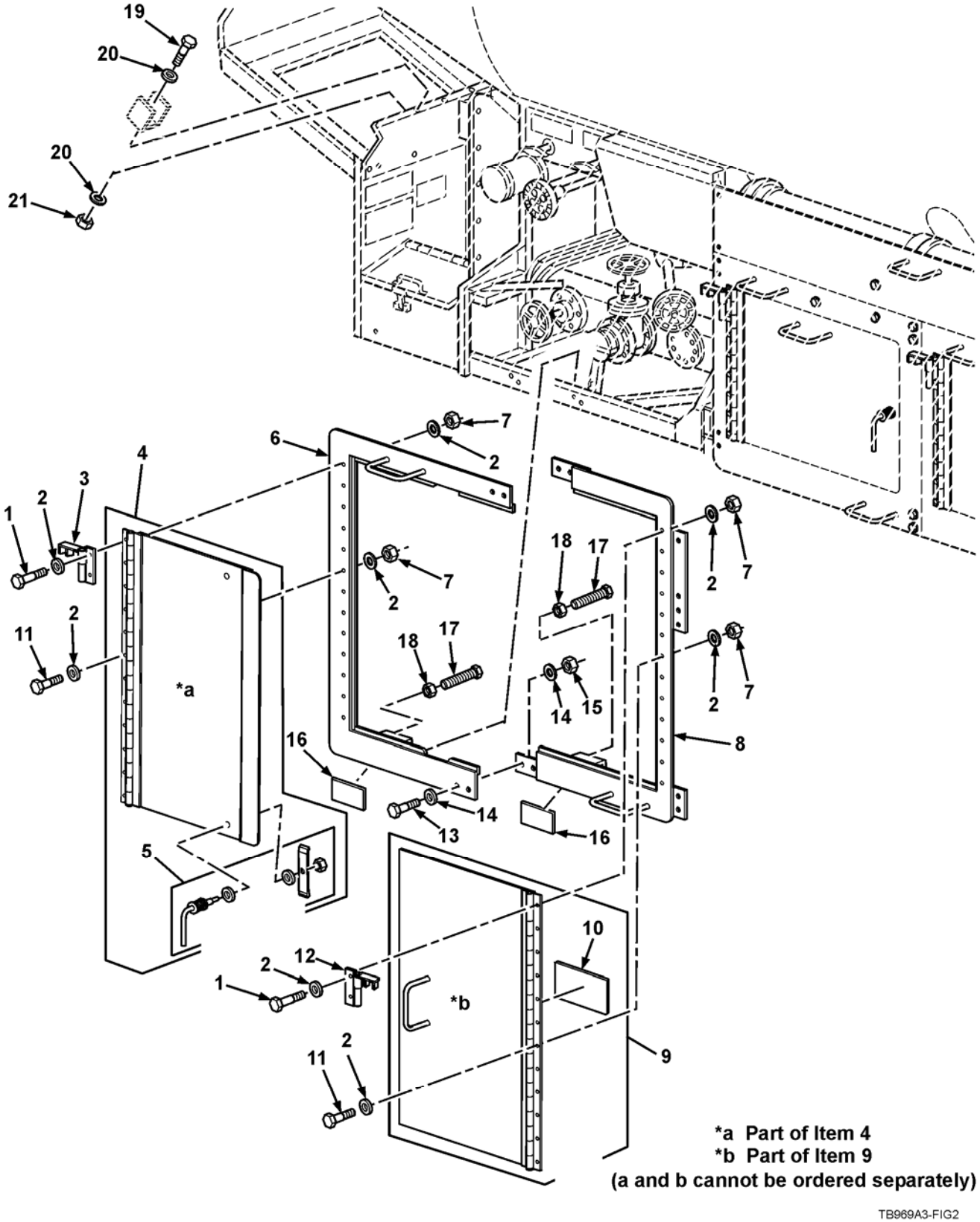


Figure 2. Roadside Armor Plate Door Assemblies and Door Frame Panels

(1) ITEM NO	(2) SMR	(3) NSN	(4) CAGE	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 3307 SPECIAL PURPOSE KITS FIG.2 ROADSIDE ARMOR PLATE DOOR ASSEMBLIES AND DOOR FRAME PANELS	
1	PAOZZA	5305-00-725-2317	80204	B1821BH038C150N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	4
2	PAOZZA	5310-00-773-7618	80205	MS15795-814	WASHER,FLAT PART OF KIT P/N 57K4844. UOC:AOH	52
3	PAOZZA		31902	12500887-001	HANDLE,MANUAL CONTR PART OF KIT P/N 57K4844..... UOC:AOH	1
4	PBOZZD		31902	12500893	DOOR ASSEMBLY PART OF KIT P/N 57K4844..... UOC:AOH	1
5	PAOZZA		31902	12502002	.LATCH,DOOR,VEHICULA..... UOC:AOH	2
6	PBOZZD		31902	12500896	ARMOR,SUPPLEMENTAL PART OF KIT P/N 57K4844..... UOC:AOH	1
7	PAOZZA		96906	M45913/4-6CG8Z	NUT,SELF-LOCKING PART OF KIT P/N 57K4844..... UOC:AOH,	26
8	PBOZZD		31902	12500895	ARMOR,SUPPLEMENTAL PART OF KIT P/N 57K4844..... UOC:AOH	1
9	PBOZZD		31902	12500894	DOOR ASSEMBLY PART OF KIT P/N 57K4844..... UOC:AOH	1
10	PAOZZA		31902	12502029	.PLACARD SLING DATA..... UOC:AOH	1
11	PAOZZA	5305-00-068-0511	80204	B1821BH038C125N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	22
12	PAOZZA		31902	12500887-002	HANDLE,MANUAL CONTR PART OF KIT P/N 57K4844..... UOC:AOH	1
13	PAOZZA	5305-00-071-2070	80204	B1821BH050C175N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	4
14	PAOZZA	5310-00-787-9425	80205	MS15795-818	WASHER,FLAT PART OF KIT P/N 57K4844. UOC:AOH	8
15	PAOZZA		96906	M45913/4-8CG8Z	NUT,SELF-LOCKING HE PART OF KIT P/N 57K4844..... UOC:AOH	4
16	PAOZZA		31902	12502016	SPACER PART OF KIT P/N 57K4844..... UOC:AOH	2
17	PAOZZA		3A054	92620A806	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	4
18	PAOZZA	5310-00-851-2677	96906	MS35691-49	NUT,JAM,HEXAGON PART OF KIT P/N 57K4844..... UOC:AOH	4
19	PAOZZA	5305-00-068-0508	80204	B1821BH025C075N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	2
20	PAOZZA	5310-01-304-8733	96906	MS15795-852	WASHER,FLAT PART OF KIT P/N 57K4844. UOC:AOH	4
21	PAOZZA		96906	M45913/4-4CG8Z	NUT,SELF-LOCKING HE PART OF KIT P/N 57K4844..... UOC:AOH	2

END OF FIGURE

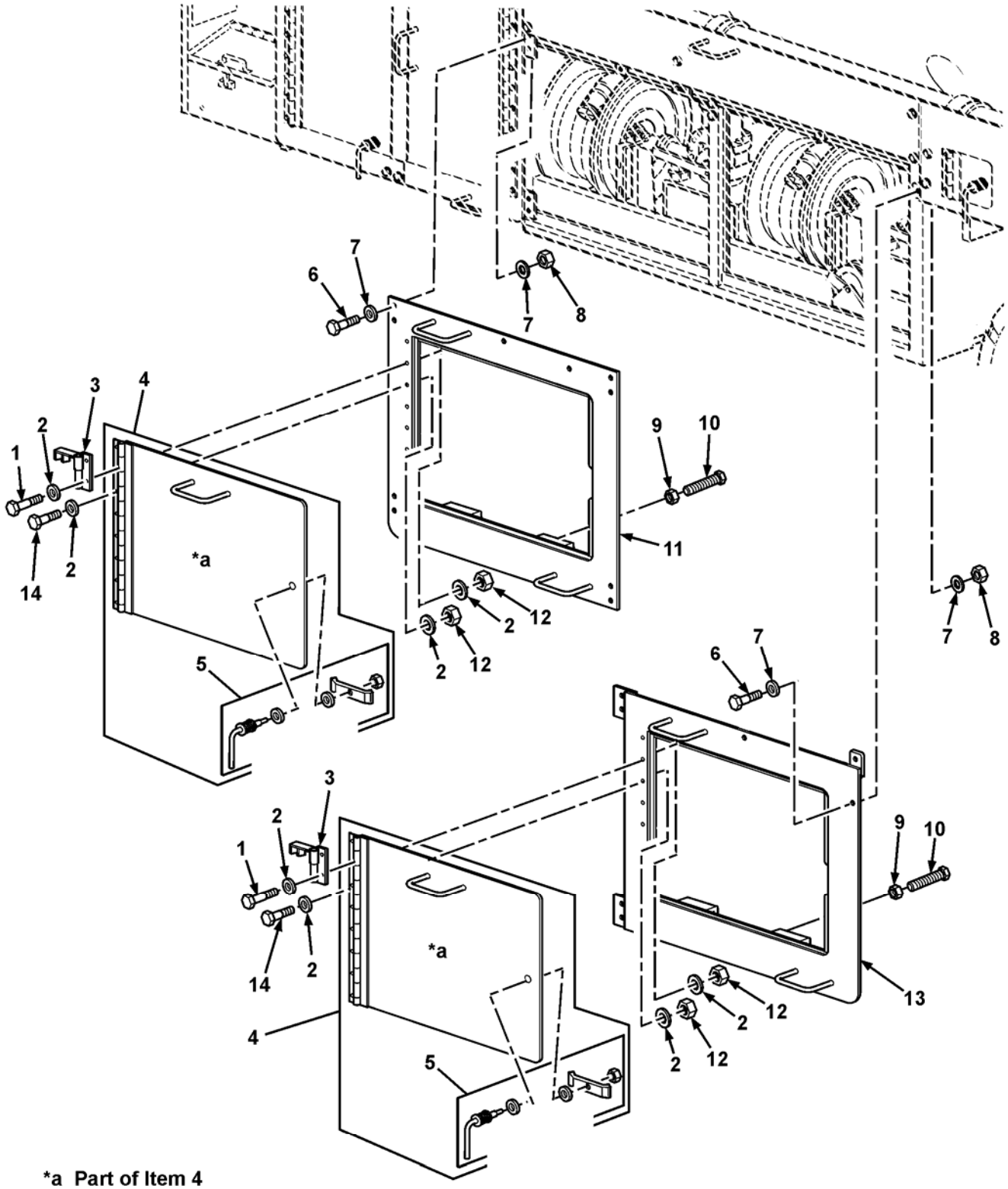


Figure 3. Roadside Armor Plate Door Assemblies, Hold Open Latches and Mounting Hardware

(1) ITEM NO	(2) SMR	(3) NSN	(4) CAGE	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 3307 SPECIAL PURPOSE KITS FIG.3 ROADSIDE ARMOR PLATE DOOR ASSEMBLIES, HOLD OPEN LATCHES AND MOUNTING HARDWARE	
1	PAOZZA	5305-00-725-2317	80204	B1821BH038C150N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	4
2	PAOZZA	5310-00-773-7618	80205	MS15795-814	WASHER,FLAT PART OF KIT P/N 57K4844. UOC:AOH	32
3	PAOZZA		31902	12500887-001	HANDLE,MANUAL CONTR PART OF KIT P/N 57K4844..... UOC:AOH	2
4	PBOZZD		31902	12501979	DOOR,ACCESS,GENERAL PART OF KIT P/N 57K4844..... UOC:AOH	2
5	PAOZZA		31902	12500849	.LATCH,DOOR,VEHICULA..... UOC:AOH	1
6	PAOZZA	5305-00-071-2070	80204	B1821BH050C175N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	10
7	PAOZZA	5310-00-787-9425	80205	MS15795-818	WASHER,FLAT PART OF KIT P/N 57K4844. UOC:AOH	20
8	PAOZZA		96906	M45913/4-8CG8Z	NUT,SELF-LOCKING HE PART OF KIT P/N 57K4844..... UOC:AOH	10
9	PAOZZA	5310-00-851-2677	96906	MS35691-49	NUT,JAM,HEXAGON PART OF KIT P/N 57K4844..... UOC:AOH	8
10	PAOZZA		3A054	92620A809	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	8
11	PBOZZD		31902	12501997	ARMOR,SUPPLEMENTAL PART OF KIT P/N 57K4844..... UOC:AOH	1
12	PAOZZA		96906	M45913/4-6CG8Z	NUT,SELF-LOCKING PART OF KIT P/N 57K4844..... UOC:AOH	16
13	PBOZZD		31902	12501998	ARMOR,SUPPLEMENTAL PART OF KIT P/N 57K4844..... UOC:AOH	1
14	PAOZZA	5305-00-068-0511	80204	B1821BH038C125N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	12

END OF FIGURE

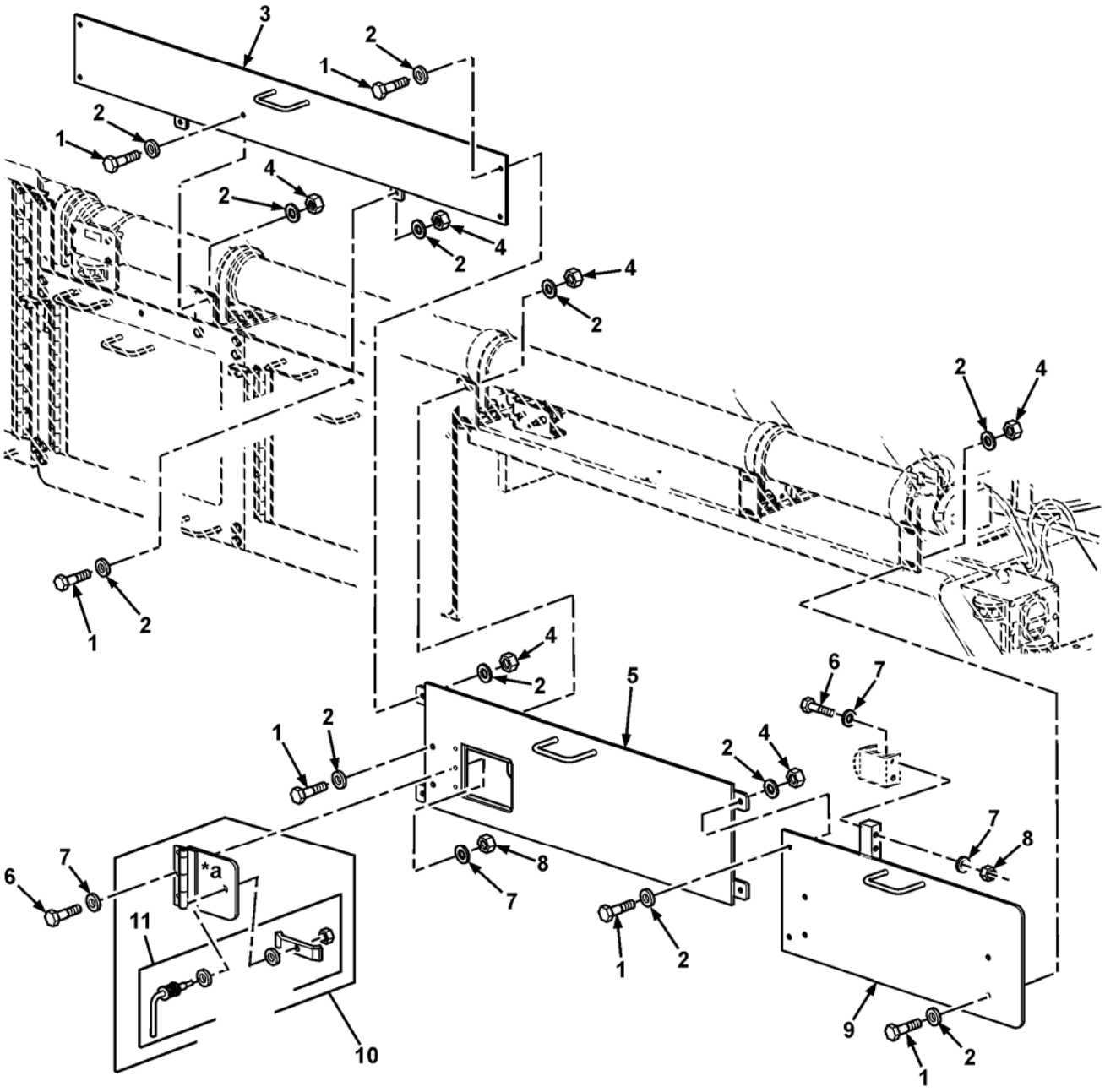


Figure 4. Roadside Armor Plate Door Assembly and Fender Panels

(1) ITEM NO	(2) SMR	(3) NSN	(4) CAGE	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 3307 SPECIAL PURPOSE KITS FIG.4 ROADSIDE ARMOR PLATE DOOR ASSEMBLY AND FENDER PANELS	
1	PAOZZA	5305-00-071-2070	80204	B1821BH050C175N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	14
2	PAOZZA	5310-00-787-9425	80205	MS15795-818	WASHER,FLAT PART OF KIT P/N 57K4844. UOC:AOH	28
3	PBOZZD		31902	12501966	ARMOR,SUPPLEMENTAL PART OF KIT P/N 57K4844..... UOC:AOH	1
4	PAOZZA		96906	M45913/4-8CG8Z	NUT,SELF-LOCKING HE PART OF KIT P/N 57K4844..... UOC:AOH	14
5	PBOZZD		31902	12501971	ARMOR,SUPPLEMENTAL PART OF KIT P/N 57K4844..... UOC:AOH	1
6	PAOZZA	5305-00-068-0511	80204	B1821BH038C125N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	5
7	PAOZZA	5310-00-773-7618	80205	MS15795-814	WASHER,FLAT PART OF KIT P/N 57K4844. UOC:AOH	10
8	PAOZZA		96906	M45913/4-6CG8Z	NUT,SELF-LOCKING PART OF KIT P/N 57K4844..... UOC:AOH	5
9	PBOZZD		31902	12501972	ARMOR,SUPPLEMENTAL PART OF KIT P/N 57K4844..... UOC:AOH	1
10	PBOZZD		31902	12501964	DOOR ASSEMBLY PART OF KIT P/N 57K4844..... UOC:AOH	1
11	PAOZZA		31902	12500849	.LATCH,DOOR,VEHICULA..... UOC:AOH	1

END OF FIGURE

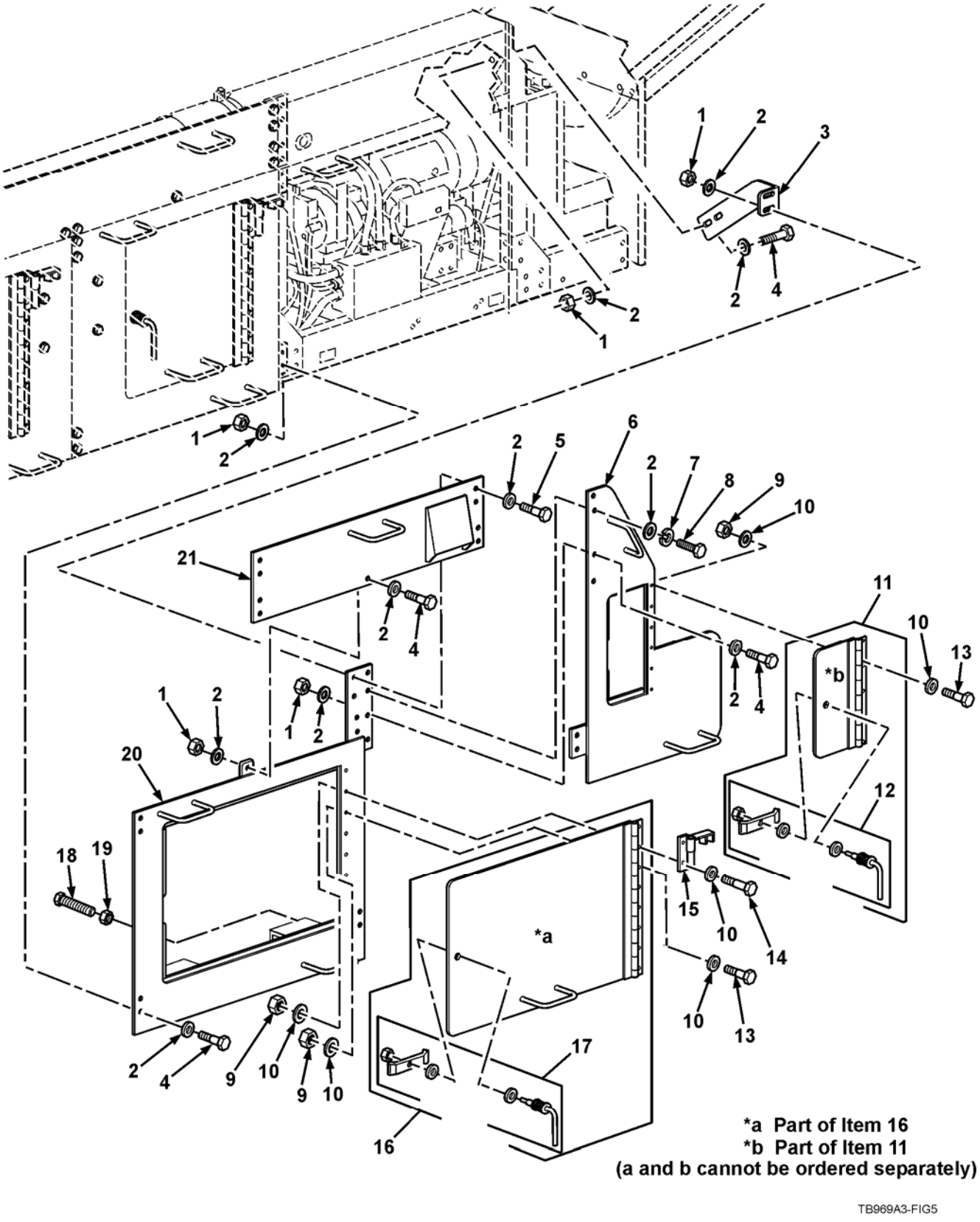


Figure 5. Curbside Front Armor Plate Door Assemblies, Panels and Mounting Bracket

(1) ITEM NO	(2) SMR	(3) NSN	(4) CAGE	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 3307 SPECIAL PURPOSE KITS FIG.5 CURBSIDE FRONT ARMOR PLATE DOOR ASSEMBLIES, PANELS AND MOUNTING BRACKET	
1	PAOZZA		96906	M45913/4-8CG8Z	NUT,SELF-LOCKING HE PART OF KIT P/N 57K4844..... UOC:AOH	19
2	PAOZZA	5310-00-787-9425	80205	MS15795-818	WASHER,FLAT PART OF KIT P/N 57K4844. UOC:AOH	40
3	PAOZZA		31902	12502013-002	BRACKET FRONT PART OF KIT P/N 57K4844..... UOC:AOH	1
4	PAOZZA	5305-00-071-2070	80204	B1821BH050C175N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	17
5	PAOZZA	5305-00-071-2071	80204	B1821BH050C200N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	2
6	PBOZZD		31902	12501981	ARMOR,SUPPLEMENTAL PART OF KIT P/N 57K4844..... UOC:AOH	1
7	PAOZZA	5310-00-933-8778	80205	MS35338-143	WASHER,LOCK PART OF KIT P/N 57K4844. UOC:AOH	2
8	PAOZZA	5305-00-071-2067	80204	B1821BH050C125N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	2
9	PAOZZA		96906	M45913/4-6CG8Z	NUT,SELF-LOCKING PART OF KIT P/N 57K4844..... UOC:AOH	14
10	PAOZZA	5310-00-773-7618	80205	MS15795-814	WASHER,FLAT PART OF KIT P/N 57K4844. UOC:AOH	28
11	PBOZZD		31902	12501963	DOOR,ACCESS,GENERAL PART OF KIT P/N 57K4844..... UOC:AOH	1
12	PAOZZA		31902	12500849	.LATCH,DOOR,VEHICULA..... UOC:AOH	1
13	PAOZZA	5305-00-068-0511	80204	B1821BH038C125N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	12
14	PAOZZA	5305-00-725-2317	80204	B1821BH038C150N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH,	2
15	PAOZZA		31902	12500887-002	HANDLE,MANUAL CONTR PART OF KIT P/N 57K4844..... UOC:AOH	1
16	PBOZZD		31902	12501962	DOOR,ACCESS,GENERAL PART OF KIT P/N 57K4844..... UOC:AOH	1
17	PAOZZA		31902	12500849	.LATCH,DOOR,VEHICULA..... UOC:AOH	1
18	PAOZZA		3A054	92620A811	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	2
19	PAOZZA	5310-00-851-2677	96906	MS35691-49	NUT,JAM,HEXAGON PART OF KIT P/N 57K4844..... UOC:AOH	2
20	PBOZZD		31902	12502024	ARMOR,SUPPLEMENTAL PART OF KIT P/N 57K4844..... UOC:AOH	1
21	PBOZZD		31902	12501987	ARMOR,SUPPLEMENTAL PART OF KIT P/N 57K4844..... UOC:AOH	1

END OF FIGURE

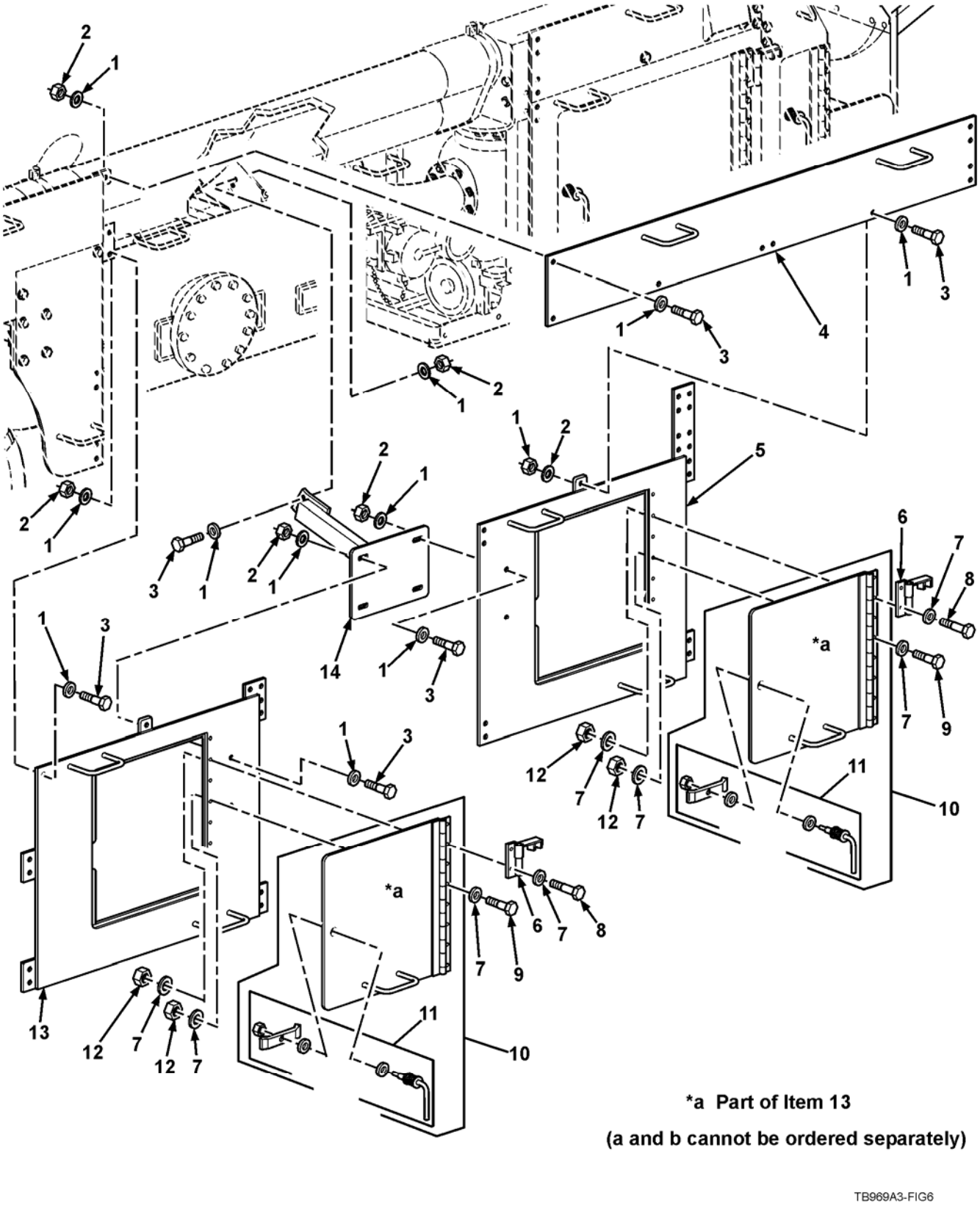


Figure 6. Curbside Center Armor Plate Door Assemblies, Panels and Mounting Bracket

(1) ITEM NO	(2) SMR	(3) NSN	(4) CAGE	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 3307 SPECIAL PURPOSE KITS FIG.6 CURBSIDE CENTER PLATE DOOR ASSEMBLIES, PANLES AND MOUNTING BRACKET	
1	PAOZZA	5310-00-787-9425	80205	MS15795-818	WASHER,FLAT PART OF KIT P/N 57K4844. UOC:AOH	44
2	PAOZZA		96906	M45913/4-8CG8Z	NUT,SELF-LOCKING HE PART OF KIT P/N 57K4844..... UOC:AOH	22
3	PAOZZA	5305-00-071-2070	80204	B1821BH050C175N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	22
4	PBOZZD		31902	12501978	ARMOR,SUPPLEMENTAL PART OF KIT P/N 57K4844..... UOC:AOH	1
5	PBOZZD		31902	12501974	ARMOR,SUPPLEMENTAL PART OF KIT P/N 57K4844..... UOC:AOH	1
6	PAOZZA		31902	12500887-002	HANDLE,MANUAL CONTR PART OF KIT P/N 57K4844..... UOC:AOH	2
7	PAOZZA	5310-00-773-7618	80205	MS15795-814	WASHER,FLAT PART OF KIT P/N 57K4844. UOC:AOH	32
8	PAOZZA	5305-00-725-2317	80204	B1821BH038C150N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH,	4
9	PAOZZA	5305-00-068-0511	80204	B1821BH038C125N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	12
10	PBOZZD		31902	12501961	DOOR,ACCESS,GENERAL PART OF KIT P/N 57K4844..... UOC:AOH	2
11	PAOZZA		31902	12500849	.LATCH,DOOR,VEHICULA..... UOC:AOH	1
12	PAOZZA		96906	M45913/4-6CG8Z	NUT,SELF-LOCKING PART OF KIT P/N 57K4844..... UOC:AOH	16
13	PBOZZD		31902	12501977	ARMOR,SUPPLEMENTAL PART OF KIT P/N 57K4844..... UOC:AOH	1
14	PAOZZA		31902	12501975	BRACKET,CENTER PART OF KIT P/N 57K4844..... UOC:AOH	1

END OF FIGURE

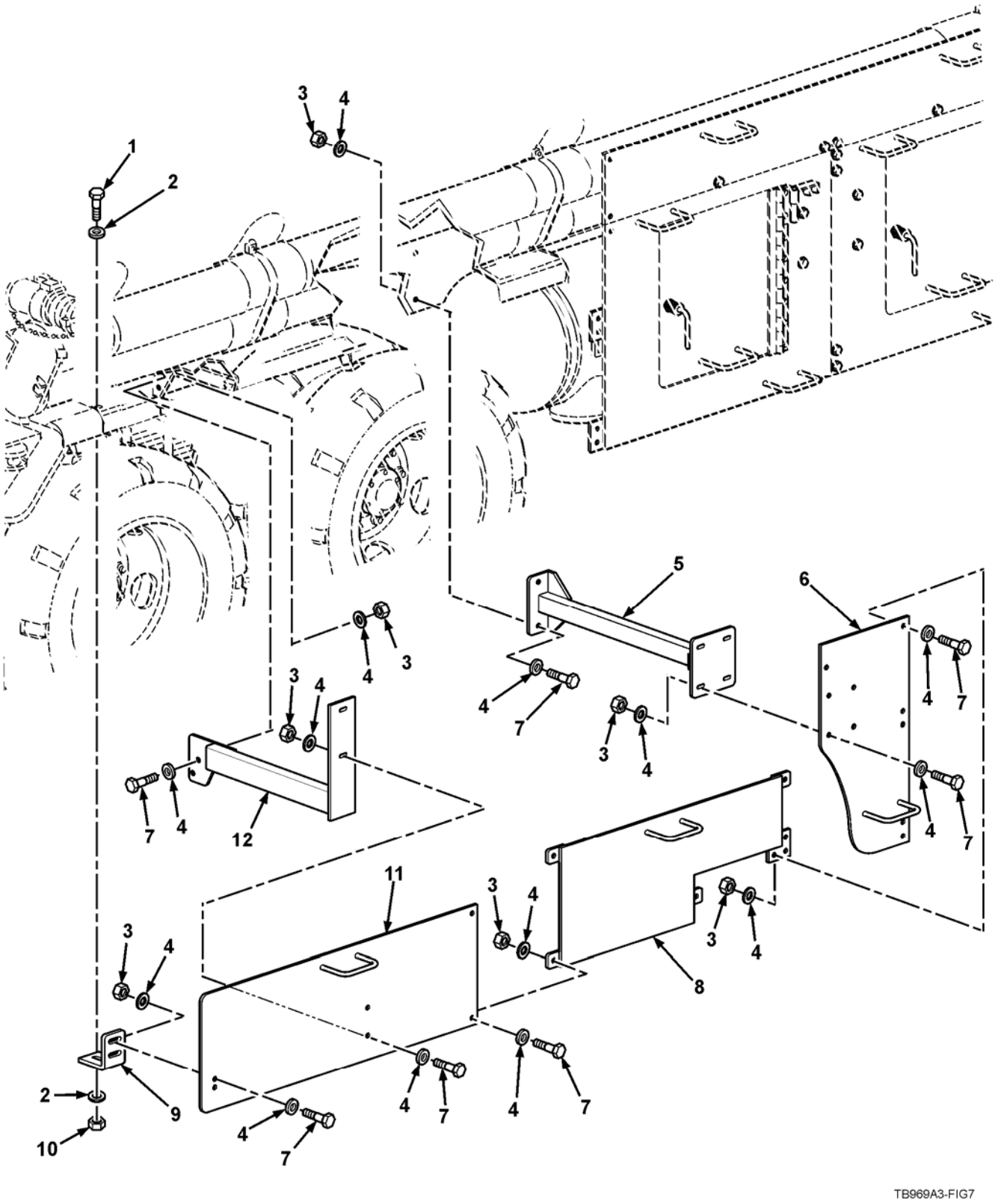


Figure 7. Curbside Rear Armor Fender Panels, Mounting Brackets and Brace

(1) ITEM NO	(2) SMR	(3) NSN	(4) CAGE	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 3307 SPECIAL PURPOSE KITS FIG.7 CURBSIDE REAR ARMOR FENDER PANELS, MOUNTING BRACKETS AND BRACE	
1	PAOZZA	5305-00-068-0511	80204	B1821BH038C125N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	1
2	PAOZZA	5310-00-773-7618	80205	MS15795-814	WASHER,FLAT PART OF KIT P/N 57K4844. UOC:AOH	2
3	PAOZZA		96906	M45913/4-8CG8Z	NUT,SELF-LOCKING HE PART OF KIT P/N 57K4844..... UOC:AOH	20
4	PAOZZA	5310-00-787-9425	80205	MS15795-818	WASHER,FLAT PART OF KIT P/N 57K4844. UOC:AOH	40
5	PAOZZA		31902	12501976	BRACKET,CENTER PART OF KIT P/N 57K4844..... UOC:AOH	1
6	PAOZZD		31902	12502019	SUPPORT PLATE PART OF KIT P/N 57K4844..... UOC:AOH	1
7	PAOZZA	5305-00-071-2070	80204	B1821BH050C175N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	20
8	PBOZZD		31902	12501980	ARMOR,SUPPLEMENTAL PART OF KIT P/N 57K4844..... UOC:AOH	1
9	PAOZZA		31902	12502025	BRACKET,REAR PART OF KIT P/N 57K4844 UOC:AOH	1
10	PAOZZA		96906	M45913/4-6CG8Z	NUT,SELF-LOCKING PART OF KIT P/N 57K4844..... UOC:AOH	1
11	PBOZZD		31902	12501973	ARMOR,SUPPLEMENTAL PART OF KIT P/N 57K4844..... UOC:AOH	1
12	PAOZZD		31902	12501988	BRACKET FENDER PART OF KIT P/N 57K4844..... UOC:AOH	1

END OF FIGURE

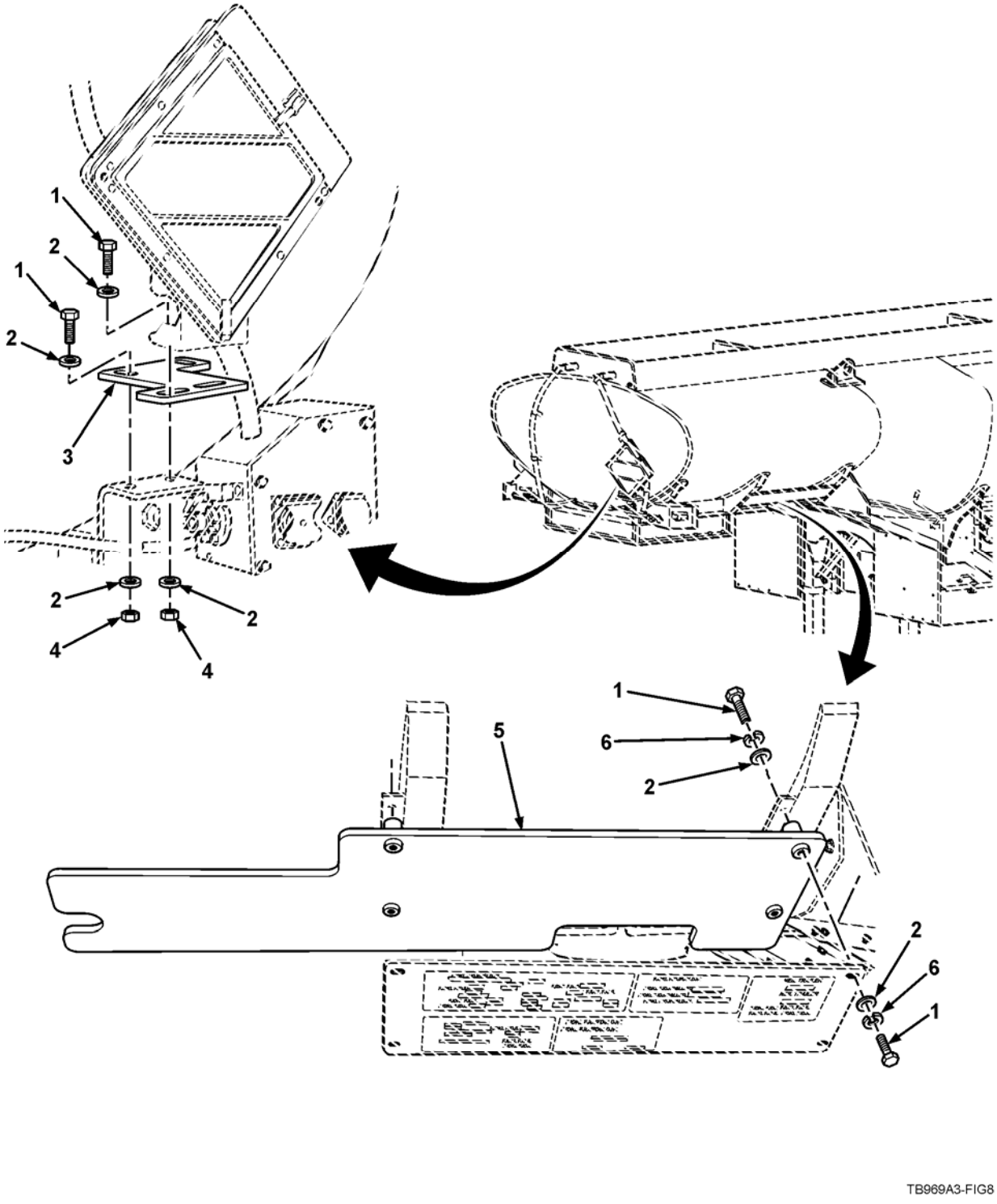


Figure 8. Side Armor Plate Panel and Placard Support

(1) ITEM NO	(2) SMR	(3) NSN	(4) CAGE	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 3307 SPECIAL PURPOSE KITS FIG.8 SIDE ARMOR PLATE PANEL AND PLACARD SUPPORT	
1	PAOZZA	5305-00-068-0510	05047	B1821BH038C100N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4864..... UOC:AOH	12
2	PAOZZA	5310-00-773-7618	80205	MS15795-814	WASHER,FLAT PART OF KIT P/N 57K4864. UOC:AOH	16
3	PAOZZA		31902	12502015	SUPPORT PART OF KIT P/N 57K4864..... UOC:AOH	1
4	PAOZZA		96906	M45913/4-6CG8Z	NUT,SELF-LOCKING PART OF KIT P/N 57K4864..... UOC:AOH	4
5	PAOZZA		31902	12501994	PANEL FRONT PART OF KIT P/N 57K4864 UOC:AOH	1
6	PAOZZA	5310-00-984-7042	96906	MS35338-141	WASHER,LOCK PART OF KIT P/N 57K4864. UOC:AOH	8

END OF FIGURE

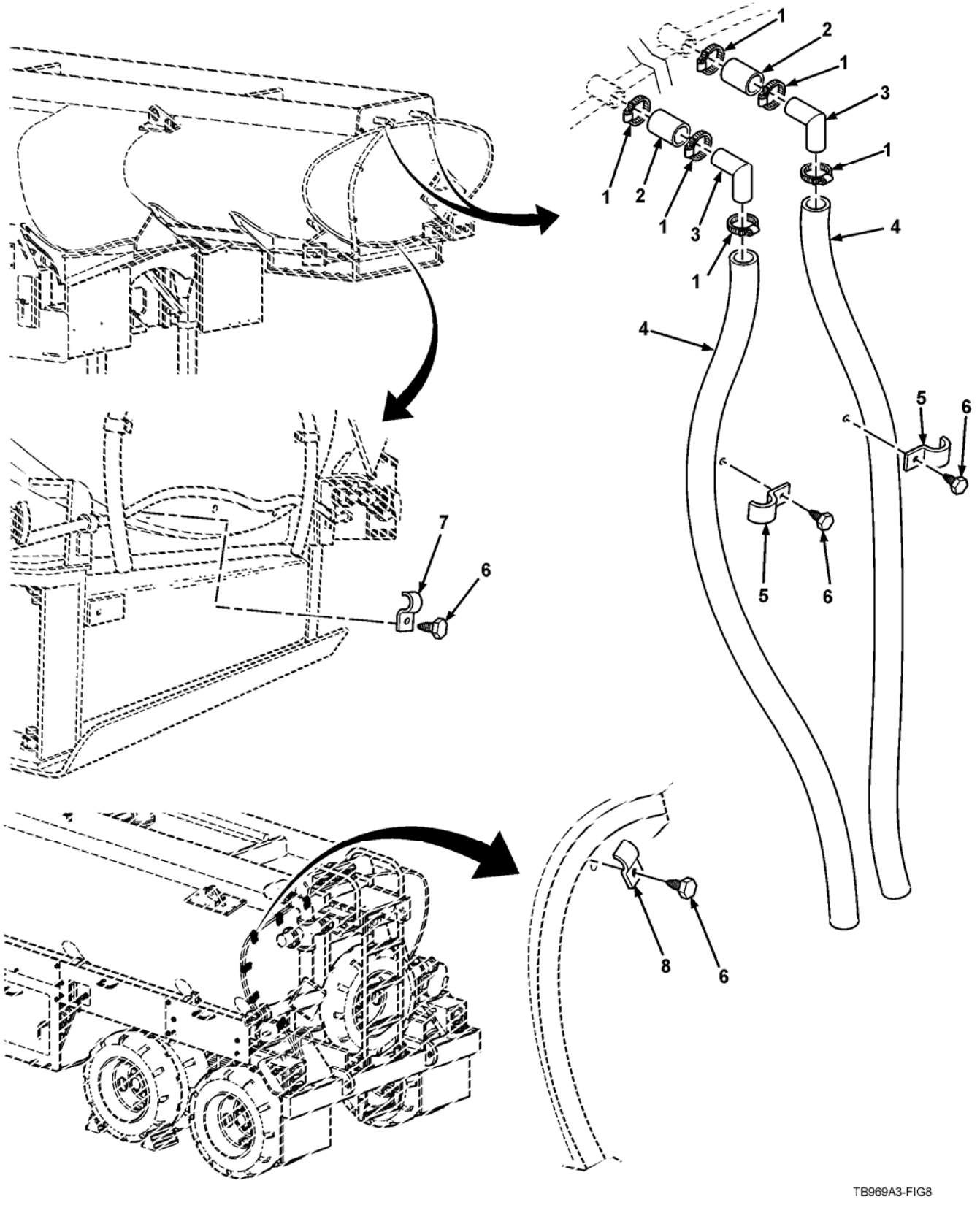


Figure 9. Drain Hoses and Wiring Harness Conduit Mounting

(1) ITEM NO	(2) SMR	(3) NSN	(4) CAGE	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 3307 SPECIAL PURPOSE KITS FIG.9 DRAIN HOESE AND WIRING HARNESS CONDUIT MOUNTING	
1	PAOZZA	4730-01-375-8073	3A054	5416K21	CLAMP,HOSE PART OF KIT P/N 57K4864.. UOC:AOH	6
2	MOOZZA		3A054	5304K46-5	HOSE,NONMETALLIC MAKE FROM NONMETALLIC HOSE P/N 5304K46,5 IN LG UOC:AOH	2
3	PAOZZA		31902	12501996	NIPPLE PART OF KIT P/N 57K4864..... UOC:AOH	2
4	MOOZZA		3A054	5304K46-42	HOSE,NONMETALLIC MAKE FROM NONMETALLIC HOSE P/N 5304K46, 42 IN LG..... UOC:AOH	2
5	PAOZZA		31902	12500884-004	CLIP,RETAINING PART OF KIT P/N 57K4864..... UOC:AOH	4
6	PAOZZA		31902	12500885	BOLT FLUID PASSAGE PART OF KIT P/N 57K4864..... UOC:AOH	12
7	PAOZZA		31902	12500884-002	CLIP,RETAINING PART OF KIT P/N 57K4864..... UOC:AOH	3
8	PAOZZA		31902	12500884-003	CLIP,RETAINING PART OF KIT P/N 57K4864..... UOC:AOH	5

END OF FIGURE

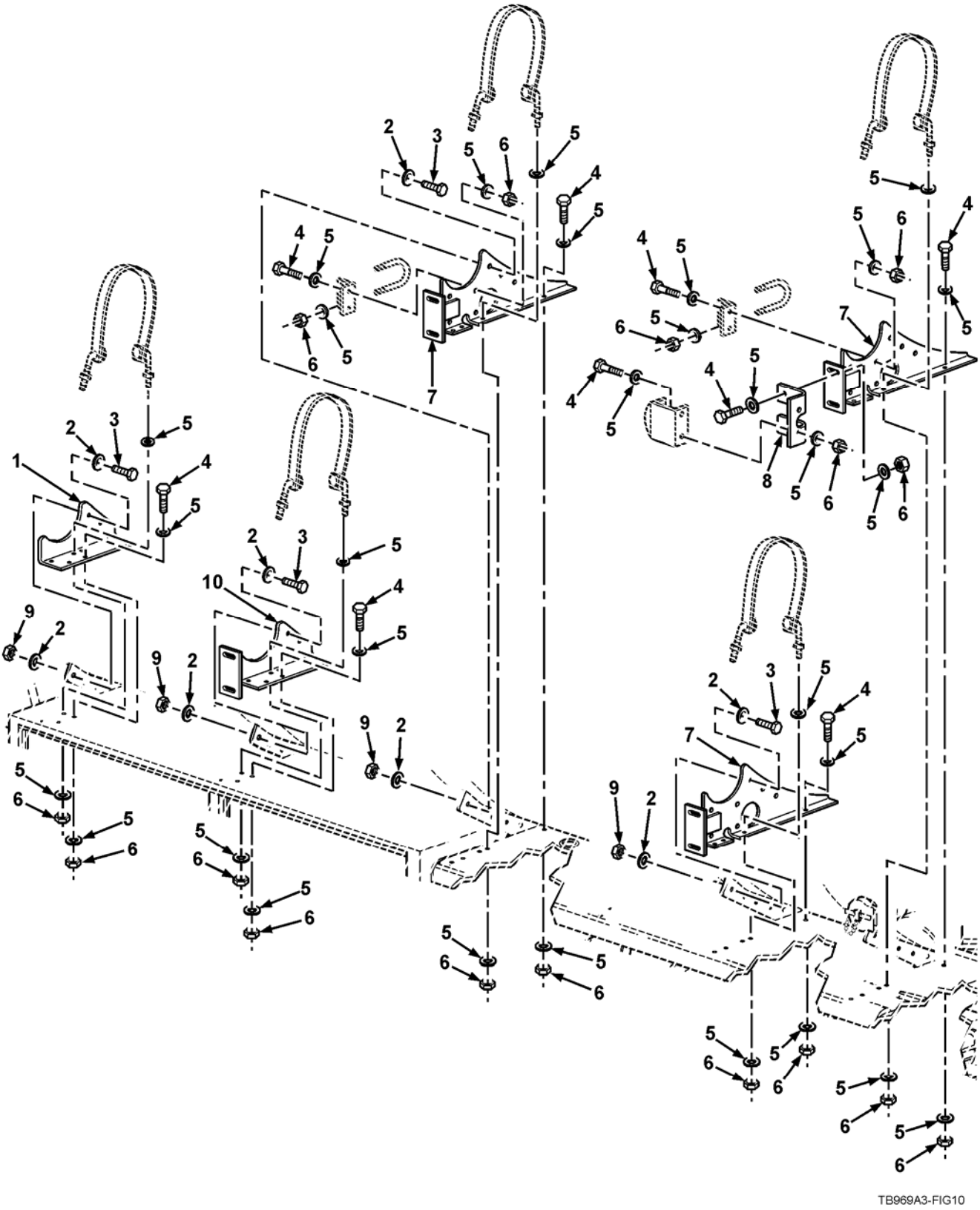


Figure 10. Roadside Tube Brackets

(1) ITEM NO	(2) SMR	(3) NSN	(4) CAGE	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 3307 SPECIAL PURPOSE KITS FIG.10 ROADSIDE TUBE BRACKETS	
1	PAOZZA		31902	12502018	BRACKET PART OF KIT P/N 57K4864..... UOC:AOH	1
2	PAOZZA	5310-00-787-9425	80205	MS15795-818	WASHER,FLAT PART OF KIT P/N 57K4844. UOC:AOH	20
3	PAOZZA	5305-00-071-2070	80204	B1821BH050C175N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4844..... UOC:AOH	10
4	PAOZZA	5305-00-068-0511	80204	B1821BH038C125N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4864..... UOC:AOH	13
5	PAOZZA	5310-00-773-7618	80205	MS15795-814	WASHER,FLAT PART OF KIT P/N 57K4864. UOC:AOH	30
6	PAOZZA		96906	M45913/4-6CG8Z	NUT,SELF-LOCKING PART OF KIT P/N 57K4864..... UOC:AOH	29
7	PAOZZA		31902	12502004	BRACKET PART OF KIT P/N 57K4864..... UOC:AOH	7
8	PAOZZA		31902	12502031	BRACKET PART OF KIT P/N 57K4864..... UOC:AOH	1
9	PAOZZA		96906	M45913/4-8CG8Z	NUT,SELF-LOCKING HE PART OF KIT P/N 57K4844..... UOC:AOH	10
10	PAOZZA		31902	12502017	BRACKET PART OF KIT P/N 57K4864..... UOC:AOH	1

END OF FIGURE

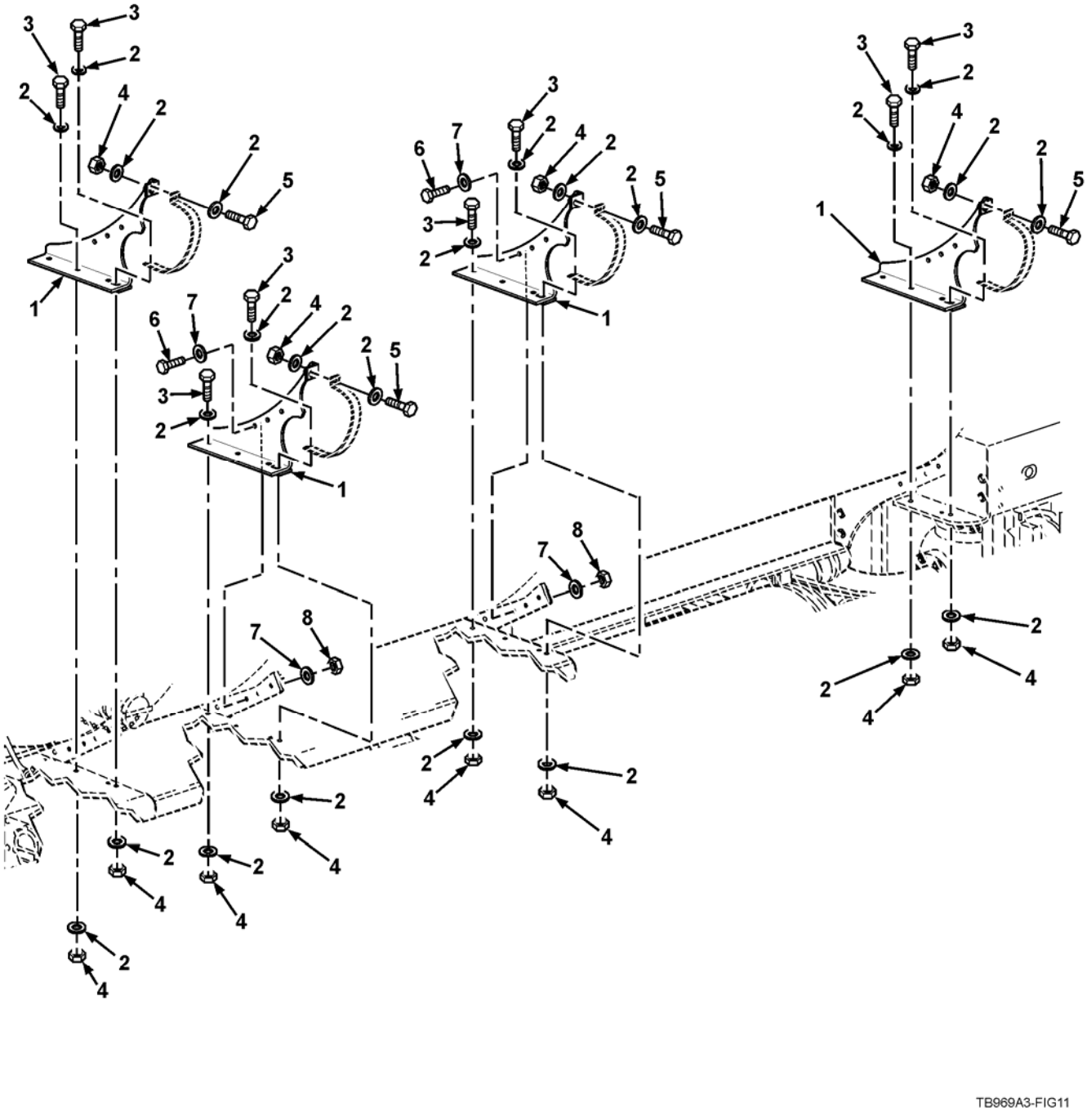


Figure 11. Curbside Tube Brackets

(1) ITEM NO	(2) SMR	(3) NSN	(4) CAGE	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 3307 SPECIAL PURPOSE KITS FIG.11 CURBSIDE TUBE BRACKETS	
1	PAOZZA		31902	12502003	BRACKET PART OF KIT P/N 57K4864..... UOC:AOH	4
2	PAOZZA	5310-00-773-7618	80205	MS15795-814	WASHER,FLAT PART OF KIT P/N 57K4864. UOC:AOH	32
3	PAOZZA	5305-00-068-0511	80204	B1821BH038C125N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4864..... UOC:AOH	12
4	PAOZZA		96906	M45913/4-6CG8Z	NUT,SELF-LOCKING PART OF KIT P/N 57K4864..... UOC:AOH	16
5	PAOZZA	5305-00-725-2317	80204	B1821BH038C150N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4864..... UOC:AOH	4
6	PAOZZA	5305-00-071-2070	80204	B1821BH050C175N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4864..... UOC:AOH	8
7	PAOZZA	5310-00-787-9425	80205	MS15795-818	WASHER,FLAT PART OF KIT P/N 57K4864. UOC:AOH	16
8	PAOZZA		96906	M45913/4-8CG8Z	NUT,SELF-LOCKING HE PART OF KIT P/N 57K4864..... UOC:AOH	8

END OF FIGURE

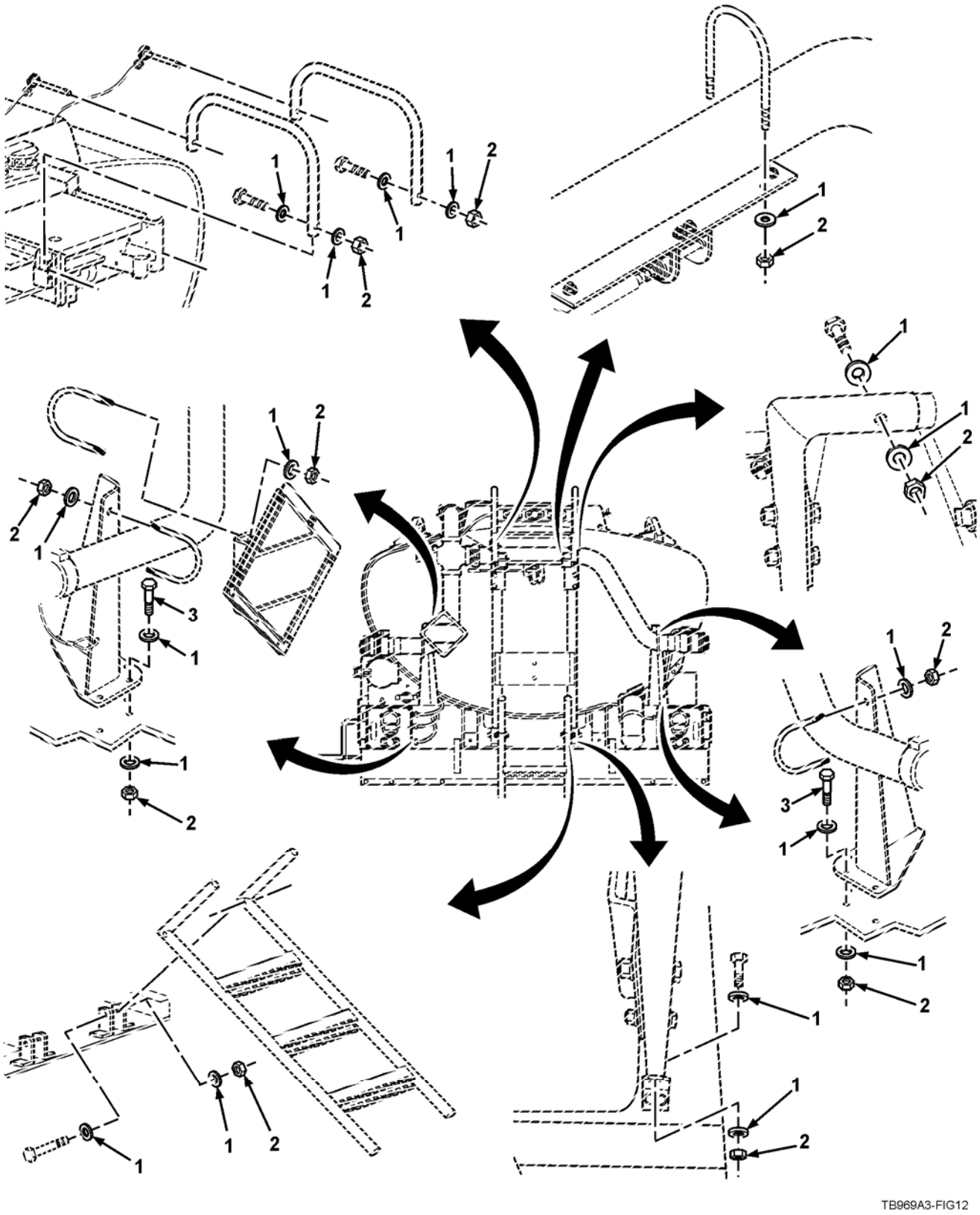


Figure 12. FTSS Replacement Hardware

(1) ITEM NO	(2) SMR	(3) NSN	(4) CAGE	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 3307 SPECIAL PURPOSE KITS FIG.12 FTSS REPLACEMENT HARDWARE	
1	PAOZZA	5310-00-773-7618	80205	MS15795-814	WASHER,FLAT PART OF KIT P/N 57K4864. UOC:AOH	40
2	PAOZZA		96906	M45913/4-6CG8Z	NUT,SELF-LOCKING PART OF KIT P/N 57K4864..... UOC:AOH	24
3	PAOZZA	5305-00-068-0511	80204	B1821BH038C125N	SCREW,CAP,HEXAGON H PART OF KIT P/N 57K4864..... UOC:AOH	8

END OF FIGURE

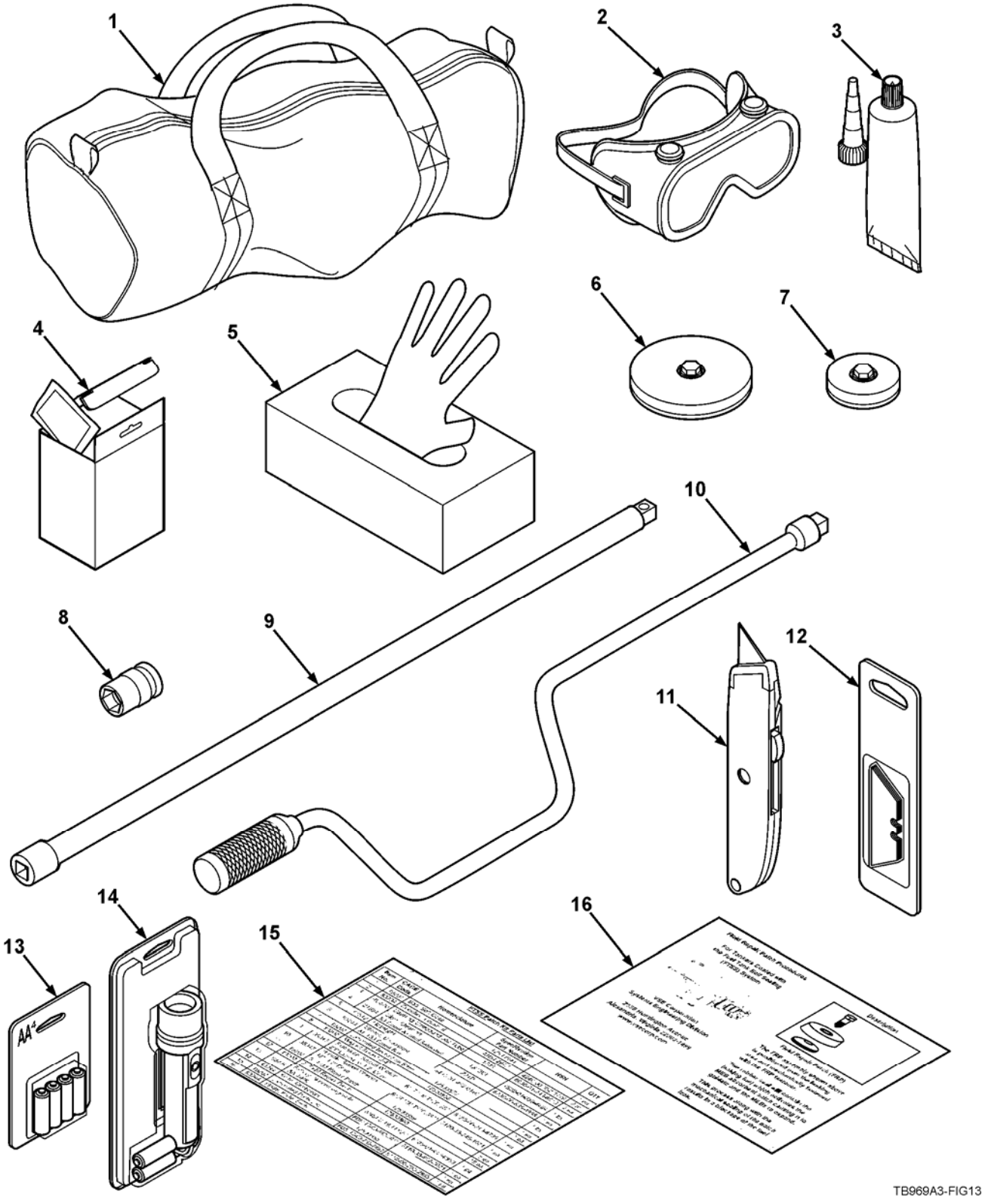


Figure 13. FTSS Repair Patch Kit, P/N 57K4786

(1) ITEM NO	(2) SMR	(3) NSN	(4) CAGE	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 3307 SPECIAL PURPOSE KITS FIG.13 FTSS REPAIR PATCH KIT, P/N 57K4786	
1	PAOZZA		79623	2608-VSE	BAG,TOOL PART OF KIT P/N 57K4786....	1
2	PAOZZA	4240-00-025-3776	45152	3336841	GOGGLES,INDUSTRIAL PART OF KIT P/N 57K4786.....	2
3	PAOZZA		0FRU4	051135-05203	ADHESIVE PART OF KIT P/N 57K4786....	2
4	PAOZZA	7920-01-036-4464	21994	TX1301	CLOTH,CLEANING PART OF KIT P/N 57K4786.....	1
5	PAOZZA	8415-01-492-0180	80244	8415-01-492-0180	GLOVES,DISPOSABLE PART OF KIT P/N 57K4786.....	1
6	PAOZZD		31902	14286	PATCH,SPILL CONTROL PART OF KIT P/N 57K4786.....	5
7	PAOZZD		31902	14287	PATCH,SPILL CONTROL PART OF KIT P/N 57K4786.....	15
8	PAOZZA		31902	14394	SOCKET,MAGNETIC PART OF KIT P/N 57K4786.....	1
9	PAOZZA	5120-00-240-8705	80020	516059-6	EXTENSION,SOCKET WR PART OF KIT P/N 57K4786.....	1
10	PAOZZA	5120-00-249-1071	05047	B107.10M TY1CL3ST1	HANDLE,SOCKET WRENC PART OF KIT P/N 57K4786.....	1
11	PAOZZA	5110-00-892-5071	80244	PD5110-00-892-5071	KNIFE,CRAFTMANS PART OF KIT P/N 57K4786.....	1
12	PAOZZA	5110-00-293-2865	80244	PD5110-00-293-2865	BLADE,KNIFE PART OF KIT P/N 57K4786.	1
13	PAOZZA	6135-01-447-0950	80204	115A	BATTERY,NONREACHARG PART OF KIT P/N 57K4786.....	1
14	PAOZZA	6230-00-635-4998	77542	Z21P	FLASHLIGHT PART OF KIT P/N 57K4786..	1
15	PAOZZA		31902	12500888	PARTS LIST PART OF KIT P/N 57K4786..	1
16	PAOZZA		31902	12500872	SHEET TECHNICAL PART OF KIT P/N 57K4786.....	1

END OF FIGURE

(1) ITEM NO	(2) SMR	(3) NSN	(4) CAGE	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 94 REPAIR KITS GROUP 9401 REPAIR KITS FIG.KITS M969A3 TBPS KITS	
1	XCOZZA		31902	57K4842	MODIFICATION KIT,VE M969A3 TBPS KIT UOC:AOH NUT SPLITTER,MANUAL(1) DRAWING,KIT TBPS (1) ARMOR SET,SUPPLEMEN(1)KITS-2 ARMOR,SUPPLEMENTAL (1)KITS-3 REPAIR KIT (1)KITS-4	1
2	PBOZZD		31902	57K4844	ARMOR SET,SUPPLEMEN PART OF KIT P/N 57K4842..... UOC:AOH NUT,SELF-LOCKING HE(108) 1-1 WASHER,FLAT (263) 1-2 T-BOLT (8) 1-3 ARMOR,SUPPLEMENTAL (1) 1-4 ARMOR,SUPPLEMENTAL (1) 1-5 SHIM (3) 1-6 SUPPORT PLATE (1) 1-7 SCREW,CAP,HEXAGON H(100) 1-8 WASHER,LOCK (8) 1-9 SCREW,CAP,HEXAGON H(8) 1-10 SCREW,CAP,HEXAGON H(14) 2-1 WASHER,FLAT (160) 2-2 HANDLE,MANUAL CONTR(3) 2-3 DOOR ASSEMBLY (1) 2-4 ARMOR,SUPPLEMENTAL (1) 2-6 NUT,SELF-LOCKING (82) 2-7 ARMOR,SUPPLEMENTAL (1) 2-8 DOOR ASSEMBLY (1) 2-9 SCREW,CAP,HEXAGON H(64) 2-11 HANDLE,MANUAL CONTR(4) 2-12 SPACER (2) 2-16 SCREW,CAP,HEXAGON H(4) 2-17 NUT,JAM,HEXAGON (14) 2-18 SCREW,CAP,HEXAGON H(2) 2-19 WASHER,FLAT (4) 2-20 NUT,SELF-LOCKING HE(2) 2-21 DOOR,ACCESS,GENERAL(2) 3-4 SCREW,CAP,HEXAGON H(14) 3-10 ARMOR,SUPPLEMENTAL (1) 3-11 ARMOR,SUPPLEMENTAL (1) 3-13 ARMOR,SUPPLEMENTAL (1) 4-3 ARMOR,SUPPLEMENTAL (1) 4-5 ARMOR,SUPPLEMENTAL (1) 4-9 DOOR ASSEMBLY (1) 4-10 BRACKET (1) 5-3 SCREW,CAP,HEXAGON H(2) 5-5 ARMOR,SUPPLEMENTAL (1) 5-6 DOOR,ACCESS,GENERAL(1) 5-11 DOOR,ACCESS,GENERAL(1) 5-16 SCREW,CAP,HEXAGON H(14) 5-18 ARMOR,SUPPLEMENTAL (1) 5-20 ARMOR,SUPPLEMENTAL (1) 5-21 ARMOR,SUPPLEMENTAL (1) 6-4 ARMOR,SUPPLEMENTAL (1) 6-5 DOOR,ACCESS,GENERAL(2) 6-10 DRAWING,ASSEMBLY AO(1) ARMOR,SUPPLEMENTAL (1) 6-13 BRACKET,CENTER (1) 6-14 BRACKET,CENTER (1) 7-5 SUPPORT PLATE (1) 7-6 ARMOR,SUPPLEMENTAL (1) 7-8 BRACKET,REAR (1) 7-9 ARMOR,SUPPLEMENTAL (1) 7-11 BRACKET (1) 7-12	1

(1) ITEM NO	(2) SMR	(3) NSN	(4) CAGE	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
3	PFKZZD		31902	57K4864	ARMOR,SUPPLEMENTAL FTSS KIT PART OF KIT P/N 57K4842..... UOC:AOH SCREW,CAP,HEXAGON H(12) 8-1 WASHER,FLAT (94) 8-2 SUPPORT (1) 8-3 NUT,SELF-LOCKING (51) 8-4 PANEL (1) 8-5 WASHER,LOCK (8) 8-6 CLAMP,HOSE (6) 9-1 NIPPLE (2) 9-3 CLIP,RETAINING (4) 9-5 BOLT FLUID PASSAGE (12) 9-6 CLIP,RETAINING (3) 9-7 CLIP,RETAINING (6) 9-8 BRACKET (1) 10-1 SCREW,CAP,HEXAGON H(31) 10-4 BRACKET (3) 10-7 BRACKET (1) 10-8 BRACKET (1) 10-10 BRACKET (4) 11-1 DRAWING,FTSS APPLIC(1) SCREW,CAP,HEXAGON H(4) 11-5 DRAWING,FTSS APPLIC(1) SCREW,CAP,HEXAGON H(18) 11-6 WASHER,FLAT (36) 11-7 NUT,SELF-LOCKING HE(18) 11-8 HOSE,NONMETALLIC (2)BULK-1 DRAWING,FTSS MEBS (1) DRAWING,POLYURETHAN(1)	1
4	PAOZZD	4940-01-540-2973	31902	57K4786	REPAIR KIT PART OF KIT P/N 57K4783.. , 57K4787, 57K4862, 57K4842..... BAG,TOOL (1) 13-1 GOGGLES,INDUSTRIAL (2) 13-2 ADHESIVE (2) 13-3 CLOTH,CLEANING (1) 13-4 GLOVES,DISPOSABLE (1) 13-5 PATCH,SPILL CONTROL(5) 13-6 PATCH,SPILL CONTROL(15) 13-7 SOCKET,MAGNETIC (1) 13-8 EXTENSION,SOCKET WR(1) 13-9 HANDLE,SOCKET WRENC(1) 13-10 KNIFE,CRAFTMANS (1) 13-11 BLADE,KNIFE (1) 13-12 BATTERY,NONREACHARG(1) 13-13 FLASHLIGHT (1) 13-14 PARTS LIST (1) 13-15 SHEET TECHNICAL (1) 13-16	1

END OF FIGURE

(1) ITEM NO	(2) SMR	(3) NSN	(4) CAGE	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 95 GENERAL USE STANDARDIZED PARTS GROUP 9501 BULK MATERIAL FIG.BULK BULK MATERIAL	
1	PAOZZA		3A054	5304K46	HOSE,NONMETALLIC EPDM RUBBER,POLYESTER REINFORCED, -40-200F, OIL, WATER, 150 PSI MAX, 1.25 IN ID, 1.75 IN OD, 50 FT LENGTH PART OF KIT P/N 57K4864..... UOC:AOH,	2

END OF FIGURE

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5305-00-068-0510	8	1		4	7
5305-00-068-0511	2	11		5	10
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	4	6		7	2
	5	13		8	2
	6	9		10	5
	7	1		11	2
	10	4		12	1
	11	3	5310-00-787-9425	1	2
	12	3		2	14
5305-00-071-2067	1	10		3	7
	5	8		4	2
5305-00-071-2070	1	8		5	2
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	3	6		7	4
	4	1		10	2
	5	4		11	7
	6	3	5310-00-851-2677	2	18
	7	7		3	9
	10	3		5	19
	11	6	5110-00-892-5071	13	11
5305-00-071-2071	5	5	5310-00-933-8778	1	9
5120-00-240-8705	13	9		5	7
5120-00-249-1071	13	10	5310-00-984-7042	8	6
5110-00-293-2865	13	12	7920-01-036-4464	13	4
6230-00-635-4998	13	14	5310-01-304-8733	2	20
5305-00-725-2317	2	1	4730-01-375-8073	9	1
	3	1	6135-01-447-0950	13	13
	5	14	8415-01-492-0180	13	5
	6	8	4940-01-540-2973	KITS	4
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	3	3
12500887-002	2	12
	5	15
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12500888	13	15
12500893	2	4
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12500895	2	8
12500896	2	6
12501961	6	10
12501962	5	16
12501963	5	11
12501964	4	10
12501966	4	3
12501969	1	7
12501971	4	5
12501972	4	9
12501973	7	11
12501974	6	5
12501975	6	14
12501976	7	5
12501977	6	13
12501978	6	4
12501979	3	4
12501980	7	8
12501981	5	6
12501987	5	21
12501988	7	12
12501992	1	5
12501993	1	4
12501994	8	5
12501996	9	3
12501997	3	11
12501998	3	13
12502002	2	5
12502003	11	1
12502004	10	7
12502013-002	5	3
12502015	8	3
12502016	2	16
12502017	10	10
12502018	10	1
12502019	7	6
12502022	1	3
12502024	5	20
12502025	7	9
12502029	2	10
12502031	10	8
12502032	1	6
14286	13	6
14287	13	7
14394	13	8
2608-VSE	13	1
3336841	13	2
516059-6	13	9
5304K46	BULK	1
5304K46-42	9	4
5304K46-5	9	2
5416K21	9	1
57K4786	KITS	4
57K4842	KITS	1
57K4844	KITS	2
57K4864	KITS	3
8415-01-492-0180	13	5
92620A806	2	17
92620A809	3	10
92620A811	5	18
B107.10M TY1CL3S	13	10
T1		

CROSS REFERENCE INDEXES

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B1821BH038C125N	2	11		4	4
	3	14		5	1
	4	6		6	2
	5	13		7	3
	6	9		10	9
	7	1		11	8
	10	4	MS15795-814	2	2
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	12	3		4	7
B1821BH038C150N	2	1		5	10
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B1821BH050C125N	1	10		11	2
	5	8		12	1
B1821BH050C175N	1	8	MS15795-818	1	2
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	7	7		7	4
	10	3		10	2
	11	6		11	7
B1821BH050C200N	5	5	MS15795-852	2	20
M45913/4-4CG8Z	2	21	MS35338-141	8	6
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RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is ODISC4.	Use Part II *(reverse)* for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE
TO: *(Forward to proponent of publication or form) (Include ZIP Code)* AMSTA-LC-LPIT / TECH PUBS, TACOM-RI 1 Rock Island Arsenal Rock Island, IL 61299-7630	FROM: *(Activity and location) (Include ZIP Code)*	

PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
TB 9-2330-330-14&P-1	30 October 2006	TANKER BALLISTIC PROTECTION SYSTEM (TBPS/AOA/FTSS)

ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO. *	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON *(Provide exact wording of recommended changes, if possible).*

**Reference to line numbers within the paragraph or subparagraph.*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

DA FORM 2028, FEB 74 REPLACES DA FORM 2028, 1 DEC 68, WHICH WILL BE USED. USAPPC V3.00

TO: (*Forward direct to addressee listed in publication)*	FROM: (*Activity and location) (Include ZIP Code)*	DATE
AMSTA-LC-LPIT / TECH PUBS, TACOM-RI 1 Rock Island Arsenal Rock Island, IL 61299-7630		

PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION NUMBER	DATE	TITLE
TB 9-2330-330-14&P-1	30 October 2006	TANKER BALLISTIC PROTECTION SYSTEM (TBPS/AOA/FTSS)

PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III – REMARKS (*Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

USAPPC V3.00

THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inch
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Mile

SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inch
1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet
1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Mile

WEIGHTS

1 Gram = 0.001 Kilogram = 1000 Milligrams = 0.035 Ounce
1 Kilogram = 1000 Grams = 2.2 Lb
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inch
1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

LIQUID MEASURE

1 Milliliter = 0.001 Liter = 0.0338 Fluid Ounce
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

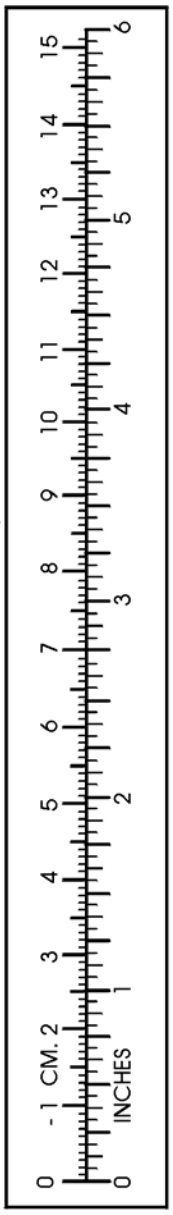
TEMPERATURE

5/9 (°F – 32) = °C
212° Fahrenheit is equivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5 (°C + 32) = °F

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621



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